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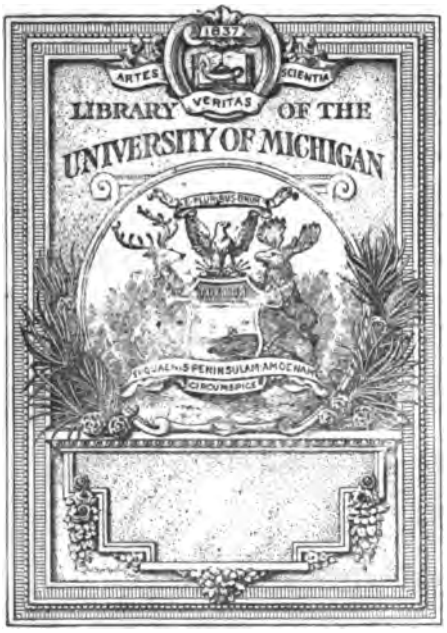
TREES & SHRUBS for ENGLISH GARDENS

BY E·T·COOK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TREES AND SHRUBS FOR ENGLISH GARDENS

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TREES & SHRUBS FOR ENGLISH GARDENS.

BY
ERNEST THOMAS COOK.

NEW YORK:
CHARLES SCRIBNER'S SONS,
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1902.

PREFACE

It cannot be urged against this work that it travels along a path already well worn, for the subject of trees and shrubs for English gardens, though almost inexhaustible, has never been so fully treated and illustrated as it deserves. The book may have many defects, but its pages will show that an honest effort has been made to offer helpful and instructive information to the many who wish to know more of the beauty of trees and shrubs.

In writing this book, the labour of my spare hours for many months, I have been greatly helped by Mr. Bean, the assistant-curator of the Royal Gardens, Kew, whose deep knowledge of the subject has been willingly imparted; and by Miss Jekyll, to whom I am indebted for many valuable suggestions and notes. Among others to whom grateful thanks are tendered are Mrs. Davidson, Mr. J. Clark, Mr. Dallimore, and Mr. S. W. Fitzherbert.

Some of the chapters have already appeared in the *Garden*, with the object of making known as widely as possible the importance of the most beautiful trees and shrubs for English woodland and pleasure-grounds.

The illustrations will show how a shrub, so often

stunted and mutilated by unwise pruning, becomes beautiful when allowed to develop naturally.

The illustrations have their own teaching value, and in this matter also I desire to thank many willing helpers, especially Miss Jekyll, Miss Willmott, and Mr. Crump, of the Madresfield Court Gardens.

It is the wish and hope of the author, whose notes, taken during many years, are embodied, that the book may do something to make English gardens more beautiful and interesting, and that it may win many to see the better ways of planting; also that it may be the means of bringing forward the many trees and shrubs of rare charm that are generally unknown or unheeded.

The word "English," of course, stands for the British Isles.

E. T. C.

November 1902.

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TREES AND SHRUBS

WANT OF VARIETY A BLEMISH

THERE is a sad want of variety amongst evergreen and deciduous shrubs in the average English garden. Faith is placed in a few shrubs whose only desire is to rob the soil of its goodness and make a monotonous ugly green bank, neither pleasant to look at nor of any protective value. As one who knows shrubs well and the way to group them says, "Even the landscape gardeners, the men who have the making of gardens—with, of course, notable exceptions—do not seem to know the rich storehouse to draw from." Very true is this. We see evidence of it every day, and the mixed shrubbery fondly clung to as a necessary feature of the garden, with distressing results. There are other shrubs than Privet in this fair world of ours, and as for providing shelter, the wind whistles through its bare stems and creates a draught good for neither man, beast, nor plant. Mr. Bean denounces the Cherry Laurel in no measured terms. "Few other plants can stand against its greedy, searching roots, and its vigorous branches and big leaves kill other leaf-growth near them.

Grown in the proper way, that is, as an isolated shrub, with abundance of space to develop its graceful branches and brilliant green leaves, the Cherry Laurel is a beautiful evergreen; it is quite happy in shady, half-wooded places. But grown, as it is so often, jammed up and smothering other things, or held in bounds by a merciless and beauty-destroying knife, its presence has not been to the advantage of English gardening."

When the planting season comes round, think of some of the good shrubs not yet in the garden, and forget pontic Rhododendron, Laurel, Aucuba, and Privet. By this is not meant rare shrubs, such as may only be had from the few nurseries of the very highest rank or from those that make rare shrubs a speciality, but good things that may be grown in any garden and that appear in all good shrub catalogues.

Perhaps no beautiful and now well-known shrub is more neglected than beautiful *Exochorda grandiflora* (the Pearl Bush). Its near relatives, the Spiræas, are in every shrubbery, but one may go through twenty and not see Exochorda. Even of the Spiræas one does not half often see enough of *S. Thunbergi*, a perfect milky way of little starry bloom in April and a most shapely little bush, or the double-flowered *S. prunifolia*, with its long wreaths of flower-like double thorn or minute white roses and its autumn bravery of scarlet foliage. The hardy Magnolias are not given the opportunity they deserve of making our gardens lovely in earliest summer. Who that has seen *Magnolia stellata* in its April dress of profuse

CHINESE GUELDER ROSE.

A GROUPING OF MAGNOLIA STELLATA.

white bloom and its summer and autumn dignity of handsome though not large foliage, would endure to be without it? or who would not desire to have the fragrant chalices of *M. soulangeana*, with their outside staining of purple, and *M. conspicua*, of purest white in the early months of March and April? And why does not every garden hold one, at least, of the sweet *Chimonanthus*, offering, as it does in February, an abundance of its little blooms of a fragrance so rich and powerful that it can be scarcely matched throughout the year.

Cassinea fulvida, still known in nurseries by its older name of Diplopappus, in winter wears its fullest dress of tiny gold-backed leafage in long graceful sprays, that are borne in such profusion that they only beg to be cut to accompany the rare flowers of winter that we bring indoors to sweeten and enliven our rooms.

Of small-flowering trees none is lovelier than the snowy Mespilus (*Amelanchier*), and for a tree of somewhat larger size the good garden form of the native Bird Cherry is beautiful in the early year. The North American *Halesia* (the Snowdrop Tree) should be in every garden, either as a bush or tree, every branch hung in May with its full array of pendent bloom of the size and general shape of Snowdrops, only of a warm and almost creamy instead of a cold snow-white colour.

Few spring-flowering shrubs are more free and graceful than *Forsythia suspensa*, and if it can be planted on a slight eminence and encouraged to

throw down its many-feet-long graceful sprays it then exhibits its best garden use. The Japanese *Viburnum plicatum* is another shrub well known but unfairly neglected, flowering with the earliest Irises. Grouped with the grand *Iris pallida dalmatica* it is a thing never to be forgotten.

Æsculus or *Pavia macrostachya*, blooming in July when flowering shrubs are rare, is easily grown and strikingly handsome, and yet how rarely seen! *Calycanthus floridus*, with its spice-scented blooms of low-toned crimson, also a late summer flower, is a fine thing in a cool, well-sheltered corner, where the sun cannot burn the flowers. The Rose Acacia (*Robinia hispida*), trained on a wall or house, is as beautiful as any Wistaria, and the quality of the low-toned rosy bloom of a much rarer colour. It is quite hardy, but so brittle that it needs close and careful wall training or other support. To name a few others in the same kind of category, but rather less hardy, the Sweet Bay is the noblest of evergreen bushes or small trees; the Tamarisk, with its grey plumes of foliage and autumn flower-plumes of tenderest pink, is a delightful plant in our southern counties, doing especially well near the sea. *Clethra alnifolia*, against a wall or in the open, is a mass of flower in late summer, and the best of the *Hibiscus syriacus*, or *Althæa frutex*, the shrubbery representatives of Mallows and Hollyhocks, are autumn flowers of the best class. A bushy plant of half-woody character that may well be classed among shrubs, and that was beloved of our grandmothers, is *Leycesteria formosa*, a

ÆSCULUS PARVIFLORA (*late July*)

DOUBLE-FLOWERED SLOE OR BLACKTHORN.

delightful thing in the later autumn. The large-fruited Euonymus (Spindle Tree) is another good thing too little grown.

For a peaty garden there are many delightful plants in the neglected though easy-to-be-had list. One of these is the beautiful and highly fragrant *Azalea occidentalis*, all the better that the flowers and leaves come together and that it is later than the Ghent Azaleas. Then there are the two sweet-scented North American Bog Myrtles, *Myrica cerifera* and *Comptonia asplenifolia*, the charming little *Ledum buxifolium*, of neatest bushy form, and the larger *L. palustre*, whose bruised leaves are of delightful aromatic fragrance; *Vaccinium pennsylvanicum*, pretty in leaf and flower and blazing scarlet in autumn, and *Gaultheria Shallon*, a most important sub-shrub, revelling in moist peat or any cool sandy soil.

These examples by no means exhaust the list of desirable shrubs that may be found for the slightest seeking. This brief recital of their names and qualities is only meant as a reminder that all these good things are close at hand, while many more are only waiting to be asked for.

ORNAMENTAL PLANTING IN WOODLAND

WHERE woodland adjoins garden ground, and the one passes into the other by an almost imperceptible gradation, a desire is often felt to let the garden influence penetrate some way into the wood by the planting within the wood of some shrubs or trees of distinctly ornamental character.

Such a desire very naturally arises—it is wild gardening with the things of larger growth; but, like all forms of wild gardening (which of all branches of gardening is the most difficult to do rightly, and needs the greatest amount of knowledge), the wishes of the planter must be tempered with extreme precaution and restraint. It does not do to plant in the wild garden things of well-known garden character. This is merely to spoil the wood, which, in many cases, is already so good that any addition would be a tasteless intrusion of something irrelevant and unsuitable.

Still, there are certain wooded places where a judicious planting would be a gain, and there are a certain number of trees and shrubs which those who have a fair knowledge of their ways, and a true sympathy with the nature of woodland, recognise as suitable for this kind of planting. They will be

IN THE WOODLAND AT KEW, SHOWING TREE AND SHRUB BY GRASSY WAY.

WAYFARING TREE (Viburnum Lantana); A NATIVE SHRUB ON CHALK.

found in these classes: Native growths that are absent or unusual in the district, such as the Spindle Tree (*Euonymus*), White Beam, Service Tree, White and Black Thorn, Wild Cherry, Bird Cherry, Wild Guelder Rose (*Viburnum Opulus*), and *V. Lantana*, Honeysuckle, Wild Roses, Juniper, and *Daphne Laureola*.

Then, among cultivated trees and shrubs, those that are nearly related to our wild kinds, including some that are found in foreign woodlands that have about the same latitude and climate as our own. Among these will be Quinces and Medlars, many kinds of ornamental Cratægus, Scarlet Oaks, various Elders and Crabs, and the grand *Sorbus americana*, so like our native Mountain Ash, but on a much larger scale.

A very careful planting with trees and shrubs of some of these and, perhaps, other allied kinds, may give additional beauty and interest to woodland. Differences of soil will, of course, be carefully considered, for if a piece of woodland were on chalky soil, a totally different selection should be made from one that would be right for a soil that was poor and sandy.

In moist, sandy, or, still better, peaty ground, especially where there is a growth of Birches and Scotch Firs, and not many other kinds of trees, a plantation of Rhododendrons may have a fine effect. But in this case it is better to use the common *R. ponticum* only, as a mixture of differently coloured kinds is sure to give a misplaced-garden look, or an impression as if a bit of garden ground had missed its way and got lost in the wood.

GROUPING OF TREES AND SHRUBS

IF this subject were considered with only a reasonable amount of thought, and the practice of it controlled by good taste, there is nothing that would do more for the beauty of our gardens or grounds. Nothing can so effectually destroy good effect as the usual senseless mixture of deciduous and evergreen shrubs that, alas! is so commonly seen in gardens—a mixture of one each of a quantity of perhaps excellent things planted about three feet apart. There would be nothing to be said against this if it were the deliberate intention of any individual, for, as a garden is for the owner's happiness, it is indisputably his right to take his pleasure in it as he will, and if he says, "I have only space for a hundred plants, and I wish them to be all different," that is for him to decide. But when the mixture is made from pure ignorance or helplessness it is then that advice may be of use, and that the assurance may be given that there are better ways that are just as easy at the beginning, and that with every year will be growing on towards some definite scheme of beauty, instead of merely growing up into a foolish tangle of horticultural imbecility.

If the intending planter has no knowledge it is well worth his while to take advice at the beginning,

not to plant at random and to feel, a few years later, first doubt, and then regret, and then, as knowledge grows, to have to face the fact that it is all wrong and that much precious time has been lost.

How to group is a large question, depending on all the conditions of the place under consideration. Whether a group is to be of tall or short growing shrubs or trees, whether it is to be of three or three hundred, and so on. The knowledge that can answer is the knowledge of gardening of the better kind. The whole thing should be done carefully on paper beforehand, or there will again be repented the error of huddled single plants. The groups will have to be well shaped and well sized and well related to each other and all that is near, or they may be merely a series of senseless blocks, not intelligently formed groups at all.

Then, in proper relation to the groups, single plants can be used with the best possible effect, as, for instance, a snowy Mespilus or a Cherry or a *Pyrus Malus floribunda* against a dark mass of Yew or *Ilex;* or a *Forsythia suspensa* casting out its long flowering branches from among bushes of *Berberis.* Then the fewer individuals will have their full value, while the larger masses will have dignity even when in leaf only, and their own special beauty at the time when they are in flower or fruit. For some flowering and fruiting bushes are best grouped, while a few are best seen standing alone, and it is only knowledge of good gardening that can guide the designer in his decisions on these points. Still it does not follow

that a shrub or flowering tree cannot be used both for groups and single use, for such an one as the Forsythia just mentioned is also of charming effect in its own groups, with the red-tinted *Berberis* or the quiet-coloured Savins, or whatever be the lower growing bushy mass that is chosen to accompany it. Every one can see the great gain of such arrangements when they are made, but to learn to make them, and even to perceive what are the plants to group together, and why, that is the outcome of the education of the garden artist.

Much has been done at Kew in the judicious grouping of plants, and here is a living place of instruction open to all, where the best of plants may be seen and, to a considerable degree, the best ways of using them in gardens.

The one-thing-at-a-time planting is always a safe guide, but as the planter gains a firmer grasp of his subject, so he may exercise more freedom in its application. Nearly every garden, shrubbery, and ornamental tree plantation is spoilt or greatly marred by too great a mixture of incongruous growths. Nothing wants more careful consideration. On the ground in the open air, and sitting at home quietly thinking, the question should be carefully thought out. The very worst thing to do is to take a nursery catalogue and make out from it a list of supposed wants. The right thing is to make a plan of the ground, to scale, if possible, though a rougher one may serve, and mark it all down in good time beforehand, not to wait until the last moment and then

GROUPING OF SHRUB AND DAFFODIL.

NATURAL GROUPING OF SHRUB IN ROUGH GROUND.

mark it; and not to send the list to the nursery till the ground is well forward for planting, so that the moment the plants come they may go to their places.

All this planning and thinking should be done in the summer, so that the list may go to the nursery in September, which will enable the nurseryman to supply the trees in the earliest and best of the planting season.

How good it would be to plant a whole hillside on chalky soil with grand groupings of Yew or Box, or with these intergrouped, and how easy afterwards to run among these groupings of lesser shrubs; or to plant light land with Scotch Fir and Holly, Thorn and Juniper (just these few things grouped and intergrouped); or wastes of sandhills near the sea within our milder shores with Sea Buckthorn and Tamarisk, and Monterey Cypress (*Cupressus macrocarpa*), and long drifts of the handsome Blue Lyme Grass.

A mile of sandy littoral might be transformed with these few things, and no others than its own wild growths, into a region of delight, where noble tree form of rapid growth, tender colour of plume-like branch and bloom and brilliant berry, and waving blue grassy ribbons, equalling in value any of the lesser Bamboos, would show a lesson of simple planting such as is most to be desired but is rarely to be seen.

The other and commoner way is nothing but a muddle from beginning to end. A van-load of

shrubs arrives from the nursery—one of each or perhaps not more than six of any kind. No plan is prepared, and the trees and shrubs are planted in the usual weary mixture, without thought or design. Generally there are three times too many for the space. It is a cruel waste and misuse of good things.

HEATHY PATHS IN OUTER GARDEN SPACES

THE subject of heathy paths comes within the scope of this book. We are not thinking of grass or gravel paths, but those in pleasure-grounds that are beyond the province of the trimly-kept garden, and yet have to be somewhat tamed from the mere narrow track such as serves for the gamekeeper on his rounds. Paths of this kind admit of varied treatment. The nature of the place and the requirements of those who use the paths will determine their general nature, and settle whether they are to be of turf or of something that must be dry in all weathers. But grass and gravel are not the only alternatives. One kind of path not often seen, but always pleasant, and at one time of year distinctly beautiful, can be made of the Common Heather (*Calluna vulgaris*). We know of such a path, 12 feet wide and some hundreds of feet long, carpeted with this native Heath, mown once a year, and feeling like a thick pile carpet to the feet; grey-green in summer, bronze-coloured in late autumn, and in the second and third weeks of August thickly set with short sprays of the low-toned pink of the Heather bloom. It is not so dry as a gravel path, but a good deal drier than grass, and

has a pleasant feeling of elasticity that is absent in common turf.

Many are the pleasure-grounds in the south of England and Scotland where the soil is sandy and, perhaps, peaty. Any such can have these pleasant heathy paths. We have even seen them on a poor sandy clay, scarcely good enough to call loam, in Sussex; for Calluna, unlike the other Heaths, will grow willingly in clay. In the case quoted the plant was wild in the place.

In a Fir wood, the bare earth carpeted with needles always makes a suitable path, and one that is always dry; the only thing to correct is to fill up any places where the bare roots rise above the path level. For in these informal paths, where we want to look about and at the trees, there should be no danger of being tripped up. The path, of whatever nature, should be wide enough for two persons—5 feet to 6 feet is ample; but it should have quite a different character to the garden path, in that its edges are not defined or straightened.

One may often see in the outskirts of an old garden a dense wood that once was only a growth of shrubbery size. The walk was originally bordered by a Box edging, and there may have been a strip of flowers between it and the shrubs. Here and there one may still see a yard or two of straggling Box nearly 2 feet high. Of course, this edging should have been removed as soon as the place became a wood, for after a certain time its original use as a formal edging to a trim plantation ceased to exist.

SHRUB AND IRIS GROUPS BY WOODLAND.

AZALEA GARDEN AT KEW (early Summer).

Nothing is pleasanter in woodland than broad, grassy ways, well enough levelled to insure safety to an unheeding walker. In early spring, before the grass has grown any height, here is the place where Daffodils can best be seen and enjoyed, some in the clear grass and some running back in wide drifts into any side opening of the wood. If the grass is cut in June, when the Daffodil foliage is ripe, and again early in September, these two mowings will suffice for the year.

In many woody places where shade is fairly thick, if there is any grass it will probably be full of moss. No path-carpet is more beautiful than a mossy one; indeed, where grass walks from the garden pass into woodland, the mossy character so sympathetic to the wood should be treasured, and the moss should not be scratched out with iron rakes. Often in the lawn proper a mixture of moss and grass is desirable, though one has been taught that all moss is hateful. In such places, though it may be well to check it by raking out every four or five years, it should by no means be destroyed, for in the lawn spaces adjoining trees or woodland the moss is right and harmonious.

There are paths for the garden and paths for the wood. A mistaken zeal that would insist on the trimness of the straight-edged garden walk in woodland or wild is just as much misplaced as if by slothful oversight an accumulation of dead leaves or other débris of natural decay were permitted to remain in the region of formal terrace or parterre.

TREES AND SHRUBS IN POOR SOILS

As there is vegetation to suit nearly all natural conditions, so those who find they have to undertake planting in poor, dry, hungry sands and gravels will find that there are plenty of trees and shrubs that can be used, though the choice is necessarily a more restricted one than they might make on better land. The very fact of the fewer number of available trees and shrubs may even be a benefit in disguise, as by obliging the planter to be more restricted in his choice the planting scheme will be all the more harmonious.

As to trees, Holly, Thorn, Juniper, Birch, Scotch Fir, and Mountain Ash are found wild on the poorest soils, and will even grow in almost pure sand. Oaks, though they never grow to the dimensions of the Oak of loamy woodlands, are abundant on poor soils, where they have a character of their own that is full of pictorial value. The lovely *Amelanchier*, daintiest of small trees, revels in sandy woods, as does also the Bird Cherry, another good native tree, while the Wild Cherry becomes a forest tree of large size and of loveliest bloom. *Ilex* and *Arbutus* are excellent in the south of England, enjoying the warmth and winter dryness of light soils.

Garden shrubs in general can be grown, though

not so luxuriantly as on better soils, but some classes are especially successful on poor land. There are the Cistuses and Heaths, with Lavender and Rosemary, in the drier parts, and in the wetter places *Kalmias*, *Andromedas*, *Rhododendrons*, *Ledums*, *Permettyas*, and *Vacciniums*, with the Candleberry Gale and the native Bog Myrtle. These, which are usually classed as peat shrubs, will succeed in any sandy soil with the addition of leaf-mould, and are among the most interesting and beautiful of our garden shrubs.

Those who garden on poor and dry soils should remember that though their ground has drawbacks it has also some compensations. Such soils do not dry in cracks and open fissures in hot weather, and do not present a surface of soapy slides in wet; they can be worked at all times of the year, except in hard frost; they are easy to hoe and keep clean of weeds and are pleasant and easy to work. They correct the tendency of stony soils to the making of a quantity of coarse rank growth, and they encourage the production of a quantity of flowers of good colour.

PRUNING FLOWERING TREES AND SHRUBS

THE art of pruning properly is one that is acquired by considerable practice and observation. The first is necessary that the actual work may be well and cleanly done, and it is only by observing the manner and times of flowering of the different trees and shrubs which go to constitute a well-kept pleasure-ground that the proper time to prune can be thoroughly understood. The manner of pruning varies considerably, some pinning their faith to a slanting cut towards a bud; some preferring a straight cut; while others again are content with simply slashing off the useless wood in the quickest possible manner. The former is the best method, as it does not present a surface for the lodgment of water, an important point with those shrubs that are of a pithy nature in the centre of the wood, as the presence of water will quickly cause the stems to rot and render the plant unsightly, even if it escapes serious injury. All stems that are an inch or more in diameter should be tarred over to keep out the wet, which either rots them directly or injures them indirectly by making a moist, congenial home for the various fungoid diseases to which so many of our exotic trees and shrubs are liable.

Many shrubs which have been in one place for some years, and which have become stunted or poorly flowered, are often given a new lease of life by a hard pruning in the winter, cutting away all the old wood entirely, and shortening the remainder. With a good feeding at the same time, they will throw up strong young shoots, full of vigour, which will bear fine and well-coloured flowers. Of course, a season of blooming will be lost by doing this, but it will be amply compensated for in after years by a healthy plant in place of a decrepit and unsightly one. The list appended includes practically every flowering tree and shrub *hardy* in this country, with the proper time of pruning it. Those not specified flower on the old wood.

ABELIA.—This genus is barely hardy, and, in most localities, is usually pruned sufficiently or too much by frost. A moderate thinning of the shoots in spring is sufficient.

ACANTHOPANAX.—There are three species of this genus hardy in this country, and of these *A. ricinifolium* requires no pruning beyond the cutting away of side-shoots to a single stem, as it attains the dimensions of a tree in Japan, its native country. *A. sessiliflorum* and *A. spinosum* are low-growing shrubs, and require an occasional thinning out, which is best done in late summer to allow the remainder to thoroughly ripen before winter.

ACTINIDA.—A climbing genus, easily grown in warm, sheltered localities. They require very little pruning, but should be watched in spring when

growth has commenced, or the twining shoots will get into a tangled and unsightly mass. Any growth not required should be cut away in winter.

AKEBIA.—"*Akebia quinata* has flowered here, on an east wall, profusely for the last seventeen years, under the following pruning treatment: Cover the space allotted with the strongest shoots, and when new growth pushes from the eyes or spurs in the spring, do not regulate it, but summer-prune away all superfluous growth before it gets entangled. It is from 'spurs' that the flowers are produced, and the more these are kept clear, the more matured they become, and flower correspondingly."—E. M. in *The Garden.*

ÆSCULUS (Horse-Chestnut).—The common representative of this requires little or no pruning, but the other species are benefited by a thinning out of misplaced and useless branches in late summer to allow light and air to the centre of the tree. This is especially important to all the Æsculus in a young state. *Æsculus parviflora* should have a good thinning if the branches or suckers become at all thick, cutting all growths not required clean away from the base.

AMELANCHIER.—These should be pruned after the flowers are past, the removal of badly-placed and weakly shoots being all that is required. If the plants are becoming too large, they can be shortened back at the same time.

AMORPHA.—If flowers are desired of *A. fruticosa* it should be kept thinned out, and not be cut back; but the flowers are not showy, and it is usually kept

CEANOTHUS AZUREUS AT KEW.

CEANOTHUS AZUREUS, VAR MARIE SIMON.

cut down every winter for the sake of its foliage. *A. canescens* should be cut down each spring to within two or three eyes of the old wood, as it flowers best on the young growth.

ANDROMEDA.—The only recognised species of this genus is *A. polifolia*, which requires no pruning.

ARALIA.—These should be kept to a single stem until they have attained a height of 6 to 8 feet, after which they may be allowed to branch, or be still kept to a single stem, as may be desired.

ARBUTUS.—An evergreen genus which requires no pruning.

ARISTOLOCHIA.—A genus of climbers which succeed best if the shoots are not allowed to become too thick. The weakest should be cut away in winter.

ARTEMISIA.—This genus is best known by its common representative, the Southernwood, but this and the other Artemisias should be cut down annually in a young state. When older, an occasional thinning out of the shoots in winter is sufficient.

BACCHARIS.—Of this, *B. halimifolia* flowers on the young wood and should be cut back annually, while *B. patagonica* should not be pruned at all.

BERBERIS.—Properly the Berberis requires no pruning, but the stronger-growing species, such as *B. aristata*, *B. Lycium*, *B. virescens*, *B. vulgaris*, &c., require an occasional thinning to keep them within bounds.

BERCHEMIA.—A climbing genus which requires no pruning.

BRUCKENTHALIA.—A dwarf-growing Ericaceous genus, the seed-pods of which should be removed as soon as the flowers are past, or the plants will be seriously weakened.

BRYANTHUS.—This should be treated the same as the last, which it somewhat resembles.

BUDDLEIA.—Of these, *B. japonica*, *B. intermedia*, and *B. lindleyana* flower on the young wood and require cutting back every winter to within two or three eyes of the old wood; *B. globosa* need not be pruned at all, except in a young state to keep it bushy; and *B. paniculata* only requires thinning out if it becomes too thick, which is not a very common occurrence.

CALLUNA (the Ling).—This and its numerous varieties should have the old flowers cut off as soon as they are past, and any long or straggling growth cut back at the same time.

CALOPHACA.—The solitary representative of this genus is rather inclined to become straggly if growing at all freely. When this is the case, the plant is benefited by the cutting back of the longer shoots in winter.

CALYCANTHUS.—These require an occasional thinning of the branches, and any long shoots may be shortened with advantage.

CAMELLIA.—These, which should be grown outdoors much more than they are, should be cut down if they get unhealthy or unshapely, which should be done in April. Otherwise no pruning is required.

CARAGANA.—Cut away all the straggling or misplaced branches.

CARMICHAELIA.—Requires no pruning.

CASSANDRA.—See CALLUNA.

CASSINIA.—These are grown more for their foliage than for their flowers, and should be cut down in the winter or early spring. This can be done annually or biennially according to whether the plants are growing strongly or not.

CASSIOPE.—See CALLUNA.

CATALPA.—This genus contains some of our handsomest flowering trees, all of which require careful pruning after the flowers are past, thinning out the weakly wood, and shortening any long branches.

CEANOTHUS.—Of these, *C. americanus*, *C. azureus*, *C. integerrimus*, and the garden hybrids, such as "Gloire de Versailles," "Marie Simon," "Ceres," &c., flower on the young wood, and should be cut back in spring, allowing only sufficient shoots to remain to form a well-balanced plant, and shortening them back to within two or three eyes of the old wood. The remaining species flower on the old wood, and merely require a shortening back of the stronger shoots and a thinning out of the weakly ones after the flowers are past.

CELASTRUS.—A climbing genus of strong and vigorous habit with showy fruits. They only require sufficient pruning in winter to keep them within bounds.

CERCIS.—Requires no pruning, except such as may be necessary to make well-shaped plants, which should be done after flowering.

CHIMONANTHUS.—The shoots of this should be

shortened back after flowering, and if on a wall they should be spurred in.

CHIONANTHUS.—See CERCIS.

CISTUS.—Those which are hardy of this genus should be cut back each spring while in a young state, but when they have attained a flowering size no pruning is required. The cutting back of young plants induces a bushy habit, and also keeps them from weakening themselves by blooming and seeding.

CLEMATIS.—The garden forms of this genus are divided into two sections, of which *C. Jackmani*, *C. lanuginosa*, *C. Viticella*, and *C. aromatica* (*C. cærulea odorata*) are the types of those which flower on the young wood, and which require cutting back close to the old wood in the winter; while *C. florida*, *C. patens*, and *C. montana* are the types of those which flower on the ripened wood of the previous year, and merely require a thinning out of weakly or unnecessary growth. Of species other than those mentioned above, *C. Flammula*, *C. paniculata*, and *C. Vitalba* flower on the young wood; and the remaining species are either herbaceous or flower on the old wood.

CLETHRA.—These practically require no pruning, but long shoots may be shortened and weakly ones cut away with advantage.

COLUTEA.—These make better plants and flower later if they are cut back every winter. *C. istria* (a rare species) should not be cut down if flowers are desired.

CORNUS.—The strong-growing shrubby Cornus,

PEARL BUSH (*Exochorda grandiflora*) *SHOWING ITS NATURAL BEAUTY.*

such as *C. alba*, *C. Amomum*, *C. Baileyi*, *C. pubescens*, and *C. stolonifera* require an annual thinning out, and those with brightly-coloured stems should be cut down every spring for their effect during the following winter. The remaining Cornus require little or no pruning.

COTONEASTER.—The large-growing species should be pruned in late summer, but only sufficiently to keep them within bounds; *C. Simonsii* requires cutting down annually while young to make it bushy, and the dwarf-growing kinds are best left alone.

CRATÆGUS.—Keep the heads well thinned out to allow light and air to the centre of the tree. This should be done in late summer.

CYTISUS.—These require very little pruning, with the exception of *C. nigricans* and *C. capitatus*, which flower on the young wood, and should be cut back annually. The other species and varieties make better plants if they are cut down each year while in a small state, but they should be left alone when they have attained flowering size.

DABŒCIA (the Irish Heath).—Cut away all old flower stems in early winter.

DAPHNE.—Requires no pruning.

DESMODIUM.—These flower on the young wood, and should be cut nearly to the ground-line every spring.

DEUTZIA.—The old wood should be kept cut out of these, but no shortening of young shoots should be attempted.

ELÆAGNUS.—These require an annual overhaul-

ing to keep them in good condition. This should be done in late summer, when the plants should be well thinned out, and all useless growth cut clean away.

ERICA.—See CALLUNA.

ESCALLONIA.—These are usually cut back by frost; but if they escape, *E. rubra* and *E. punctata* should have their long growths shortened back in spring, while the other hardy species need not be touched.

EXOCHORDA.—These usually require no pruning, but if the plants are getting too large or unshapely, they should be cut back immediately after flowering.

FATSIA (*Aralia Sieboldii*).—This is usually cut by frost, but it stands a cutting back in spring, when new growth is soon made which will flower late in the following autumn.

FOTHERGILLA.—Requires no pruning.

GENISTA.—*G. tinctoria* flowers on the young wood, and should be cut back every spring. The other species of Genista should not be pruned, except to keep them in shape.

HALESIA.—These are small trees or large shrubs, and should not be shortened back, but are improved if the growths are kept thinned out, which should be done after the flowers are past.

HALIMODENDRON.—Requires no pruning.

HAMAMELIS.—Thin out regularly, as they are very apt to get thick and make weakly growths.

HEDYSARUM.—This flowers on the young wood, and should be cut back each spring, but not too hard. The growths can also be pegged down to improve the plant, which is apt to get straggling.

HELIANTHEMUM.—Cut away all dead flowers and seed-pods after blooming.

HIBISCUS.—Thin out in winter, but only shorten the longest shoots.

HYDRANGEA.—These flower best on young wood, and should be cut down in winter.

HYPERICUM.—These should be cut back fairly hard in early spring, as they all flower on the young growth.

INDIGOFERA.—Cut down every spring, as they flower on the young wood.

ITEA.—Keep the growths thinned and cut away all old wood.

JAMESIA.—This should be treated as the preceding.

JASMINUM.—*J. fruticans* and *J. humile* are shrubs which should be thinned regularly; and *J. nudiflorum* and *J. officinale* are climbers, which should be spurred in after flowering.

KALMIA.—Remove seed-pods as soon as the flowers are past.

KERRIA.—Cut away the old wood to encourage the young growths, which yield the best flowers.

LABURNUM.—These should be thinned after flowering, cutting away the old or weakly wood, and shortening any long or straggling shoots.

LAVANDULA.—Cut away all flower-spikes after they are past.

LEDUM.—Remove seed-pods after flowering.

LESPEDEZA.—See DESMODIUM, which it much resembles.

LEUCOTHOE.—*L. axillaris* and *L. Catesbæi* flower

much better if the old growths are removed and strong young shoots encouraged. The rest of the genus require no pruning.

LEYCESTERIA.—Thin out old growths every spring.

LIGUSTRUM.—*L. ovalifolium* and its golden variety are all the better for being cut down each winter while in a young state. The remainder merely require an occasional thinning.

LIRIODENDRON.—Requires no pruning.

LONICERA.—The shrubby Loniceras are nearly all inclined to become very thick and full of weakly shoots if not well looked after. A thinning out should take place after flowering is past. The climbing Honeysuckles should only be pruned sufficiently to keep them within bounds.

LYCIUM.—These should be served the same as the shrubby Loniceras, but the operation should be performed in autumn or winter, as they flower practically all the summer.

LYONIA.—Requires no pruning.

MAGNOLIA.—Generally speaking, the Magnolias should not be pruned, but cut away useless or decaying wood. Every wound, however small, on a Magnolia should be tarred over immediately.

MICROGLOSSA.—The solitary shrubby representative of this is *M. albescens*, which should be cut down in winter, as it flowers best on the young wood.

MYRICA.—An occasional thinning is sufficient for this genus.

MYRICARIA.—Flowering on the young wood ; this should be cut back every spring.

HYDRANGEA PANICULATA GRANDIFLORA (*unpruned plant*).

HYDRANGEA PANICULATA AND VAR. GRANDIFLORA.

NEILLIA.—Thin out every year after flowering is past, cutting back the old wood to strong young shoots.

NEVIUSIA.—This requires the same pruning as Neillia.

NOTOSPARTIUM.—Requires no pruning.

NUTTALLIA.—The single species of this flowers in February, and is improved by a good thinning out of the old wood when blooming is past.

OLEARIA.—Requires no pruning.

ONONIS.—*O. rotundifolius* should be cut down every winter, as it flowers on the young wood. The remaining species flower on the older wood, and need not be touched.

OSMANTHUS.—These should not be pruned unless a particular shape is desired, when the plants may be clipped with a pair of shears in spring.

OXYCOCCUS.—This is a small creeping genus allied to Vaccinium, and requires no pruning.

OXYDENDRON.—Remove seed-pods.

PALIURUS.—This attains the dimensions of a small tree, and should be kept trimmed up for that purpose.

PARROTIA.—Thin out in spring after the flowers are past.

PAULOWNIA.—Keep to a single stem to a height of about 8 feet, and then allow it to branch. If used for sub-tropical bedding, it should be cut down to the ground every winter.

PERAPHYLLUM.—The solitary hardy species of this should not be pruned or disturbed in any way if it can be avoided.

PERIPLOCA.—A climbing genus which should be thinned out in winter, and only shortened back if necessary.

PERNETTYA.—These should not be pruned at any time.

PHILADELPHUS.—These should be thinned after flowering, and the old wood cut back to strong young shoots. This is especially important with *P. microphyllus*, *P. coronarius*, and *P. Lemoinei* and its varieties.

PHOTINIA.—Requires no pruning.

PIERIS.—Remove seed-pods.

POTENTILLA.—Thin out after flowering, and shorten any old wood back to strong young breaks.

PRUNUS.—When young, all the members of this genus that are grafted or budded are improved by being cut back each spring until they have attained a fair size and shape. More especially is this the case with the Almonds, double-flowered Peaches, and the various flowering Cherries. When older, they need only be thinned and the flowering Plums and Cherries kept spurred in, but not too hard. *Prunus japonica*, *P. nana*, and *P. triloba* should be cut down to strong young breaks after flowering, the resulting wood bearing better flowers than the old wood. If any of these three latter are grown on a wall they should be spurred back hard after blooming.

PTELEA.—When young, trim these to form small trees, and do not allow them to develop into ungainly bushes. When older, they require an occasional thinning. *P. trifoliata var. aurea*, a golden form

which is not grown so much as it deserves to be, should be cut back annually or biennially, the young wood being better coloured and bearing larger leaves than the old.

PYRUS.—The wild Pears should be spurred in the same manner as adopted for fruiting Pears, though not quite so hard. The wild Crab-apples, such as *P. baccata*, *P. floribunda*, *P. spectabilis*, &c., should be cut back every spring until they have formed well-balanced heads. Afterwards an annual thinning and a shortening of the longest shoots after flowering is sufficient. The remaining sections of Pyrus merely require an occasional thinning. *P. japonica* should be kept spurred in, whether growing on a wall or in the open, and in the latter case should not be allowed to become a mass of weakly shoots.

RHAMNUS.—These should be thinned out if becoming too thick, but, as a rule, they require very little pruning.

RHODODENDRON (including AZALEA).—Remove all seed-pods immediately the flowers are over, and any plants that are in a sickly condition should be cut down at the same time. By doing this a season or two of flower is lost, but it is practically the only means of bringing a weakly plant back to health again.

RHODOTYPUS.—Cut away old wood, and encourage the strongest of the young growths.

RHUS.—Keep these well thinned out, and destroy all suckers that appear, unless wanted for stocks. Gloves should always be worn when handling any

of the Rhus, as the sap of *all* is poisonous to a certain extent.

RIBES.—All the Ribes are improved by being cut down annually while in a young state, but when older, a yearly thinning out of the old wood is sufficient.

ROBINIA.—This is a genus that requires very little pruning when the members of it have attained a fair size, an occasional thinning being all that is necessary. In a young state they require well staking, and the longest shoots should be shortened back, as many of them are top-heavy when young.

ROSA.—Although the various garden Roses come under this heading, yet they are a class apart, and are better dealt with by specialists. The species of Rosa do not require any shortening of their shoots, which should always be left at full length, but all of them should have an annual thinning out of the old wood, either cutting it right away or back to a young shoot. Some of the species are very prone to throw up suckers from underground sometimes to a considerable distance from the plant, and these should always be dug out and got rid of; merely cutting them off only producing two evils in the place of one.

RUBUS.—This genus includes the Blackberry and Raspberry, and in a modified form the treatment accorded to them for fruiting is the best to employ with the ornamental Rubi, that is, all old wood that has flowered should be cut away and strong young canes encouraged. But while in the cultivation of

the Raspberry only a few young canes are allowed to grow, in the ornamental species practically every young growth should be utilised. The double-flowered Rubi should have some of the old wood left, as they do not make so much young growth as the single ones do.

SANTOLINA.—This is a dwarf-growing genus, the old flower-heads of which should be cut away as soon as they are past, and any long or straggling growths cut back at the same time.

SAMBUCUS.—The elders require very little pruning as a rule, but the various cut-leaved, golden, or variegated forms are improved by being cut back annually. This will prevent them flowering, but as good foliage is required the loss of the bloom is a matter of little consequence.

SKIMMIA.—Requires no pruning.

SMILAX.—The hardy species of this genus do not require any pruning if they have room to ramble. If space is restricted, thin out and shorten in autumn.

SOPHORA.—These should be kept thinned when they have attained flowering size; in a young state they should be kept to a single stem and induced to form well-shaped trees.

SPARTIUM.—This should be cut back in a small state, but when older it requires no pruning whatever.

SPIRÆA.—Though all the Spiræas will flower on the old wood, the following are better for being cut back in winter to form young flowering shoots, viz., *S. betulifolia*, *S. Douglasi*, *S. Foxii*, *S. japonica*,

S. Margaritæ, *S. salicifolia*, *S. semperflorens*, *S. tomentosa*, and many of their varieties and hybrids. The remaining Spiræas should be kept thinned out, and if any are making strong young breaks from the lower part of the plant they can be cut back to them after flowering.

STACHYURUS.—This should be thinned out after flowering.

STAPHYLEA.—*S. pinnata* should be kept thinned in late summer; *S. colchica* and *S. Colombieri* require very little pruning, but if too tall or unshapely should be cut back immediately after flowering.

STUARTIA, STYRAX } Require no pruning.

SUÆDA.—Cut back occasionally to keep it from getting ragged.

SYMPHORICARPUS.—Keep these well thinned out, which should be done in late summer.

SYRINGA (Lilac).—These should be kept free of suckers, especially the finer-named kinds, which are usually worked on stocks of the Common Lilac. In addition, disbudding may be practised with advantage in the spring, removing the majority of the blind shoots and any flowering or leading shoots that are misplaced or not required. This should be done twice or thrice at intervals of ten days or a fortnight.

TAMARIX.—Cut back in a young state, but when older they should not be pruned at all.

VACCINIUM.—The removal of any old or rough wood is sufficient for these.

VIBURNUM.—All the Viburnums grow thickly, and require an annual thinning.

VITIS.—The methods practised in growing Vines for fruit suits the ornamental species as well. If space is restricted they should be grown on the spur system, and if there is plenty of room then the extension system may be employed.

WISTARIA.—These should be kept spurred in, with the exception of the leading shoots, which merely require a shortening in early spring according to the strength of the plant.

XANTHOCERAS.—Requires no pruning.

ZENOBIA.—These require no pruning as a rule, but occasionally a hard cutting back will induce healthy growth in place of a weakly one.

PROPAGATION OF HARDY TREES AND SHRUBS

IF we were to take many books about trees and shrubs or general gardening as a guide, one might be led to think that only one way of increasing a tree or shrub existed, and that by grafting; but, as we have pointed out elsewhere, it is a mischievous practice when indiscriminately applied. It is not contended by this that grafting and budding are utterly needless, as in a few instances these methods may be rightly adopted, but the four natural ways of increase are by layers, seeds, suckers, and cuttings.

Of these, practise seed-raising whenever possible; but if seeds cannot be procured, then adopt other ways, and the man is wise who tries to keep a plant on its own roots. Neither budding nor grafting should be resorted to, unless other means fail absolutely. When standard trees cannot be got true from seed, budding or grafting must be practised, and the evils of these methods of propagation are not so pronounced in such cases as with dwarf plants. With the former, suckers, or growths from the stock, are easily seen as soon as they appear, but with dwarf plants a perfect forest of suckers may seriously weaken the plant before they are noticed.

SEEDS.—These can be sown at almost any time,

but the spring is the best, as those which germinate quickly have time to form strong young plants before the following winter. Some take two years to come up, and should be left in the ground. This refers more to seeds sown outdoors, and few hardy trees and shrubs require heat to assist germination. When sown in the open the beds should be made on a fairly rich, moist piece of ground, protected from cold winds, but fully exposed to the sun. After the seeds are sown, cover them with light tiffany shading, fir branches, or heather, but the first is best, as it is easily removed to attend to the bed. Conifers especially should be sown in beds, whether indoors or outdoors, as pot-culture results in the roots taking the shape of the pot, and never afterwards recovering from their cramped condition. It must be remembered, however, that varieties cannot be depended upon to come true from seed, though by careful selection for a few years many varieties will almost reproduce the characteristics of the parents. Hybrids, such as *Berberis stenophylla*, *Hypericum moserianum*, and many others, also do not come true from seed, so that cuttings, layers, or division of the old plants, must be the practice chosen.

SUCKERS.—Plants which throw up suckers from the base, or below the ground-line, are easily propagated by detaching these suckers in winter with a portion of root. They will grow away readily, and soon form good trees or shrubs as the case may be.

CUTTINGS.—Nearly all the hardy shrubs, and a small proportion of hardy trees also, can be pro-

pagated by cuttings taken at certain times of the year. Summer cuttings are taken during the last two weeks of May and throughout June, the actual time depending on the season, and consist of the young shoots that have grown to a length of 3 to 6 inches. These should be pulled off with a "heel," and inserted in sandy soil in a close frame, with brisk bottom heat. The cuttings should be taken on a dull day, or early in the morning, and kept cool and moist until they are in the frame. A cutting that has flagged is useless, as it never revives. Deciduous flowering shrubs are usually propagated by summer cuttings, which generally root well in a fortnight or less. Autumn cuttings are taken during August and September, and are made from the partially ripened growths of the current year, inserted in sandy soil, in a close frame, without bottom heat. Winter cuttings are made from thoroughly ripened wood at any time between October and March, and are laid in rather thickly in rows outdoors, and only about an inch or less is left above the soil. The majority of our best flowering shrubs are easily increased in this way.

LAYERS.—Excellent trees and shrubs can be got by layers, and they may be laid down at any time of the year; they will be ready for removal in about eighteen months or two years.

BUDDING.—This is done about August, and the same rules apply to trees and shrubs as to Roses, &c.

GRAFTING.—This takes place outdoors from March to May, at the earlier time for deciduous trees and

shrubs, and later on for evergreens. The actual time depends upon the season.

Where seed is not expressly mentioned below, it must be understood that this is the natural, and in many cases the best, way to propagate.

The following trees can only be raised from seed to do any good afterwards, though a few of them will throw up suckers, which can be taken off and replanted: *Æsculus* (Chestnut), *Ailantus*, *Alnus* (Alder), *Arbutus*, *Betula* (Birch), *Carpinus* (Hornbeam), *Carya* (Hickory), *Castanea* (Sweet Chestnut), *Celtis* (Nettle tree), *Fagus* (Beech), *Fraxinus* (Ash), *Gleditschia* (Honey Locust), *Juglans* (Walnut), *Laburnum*, *Liquidambar*, *Morus* (Mulberry), *Prunus*, *Pyrus*, *Quercus* (Oak), *Sophora*, *Ulmus* (Elm), and *Zelkova*. The varieties of any species of the above, and, in fact, of nearly all hardy trees, must be budded or grafted on the species they are forms of, but an exotic species should never be worked on the native representative of the genus—*e.g.* *Æsculus flava* should not be budded on the Common Horse Chestnut, as the latter is far too strong a stock for the smaller-growing Æsculus.

Acer (Maple) and *Tilia* (Lime or Linden) can be raised from seeds or by layering, the Lime especially being largely propagated from layers, which soon form strong young trees. The varieties of Maple are best worked on stocks of the species they belong to.

Cratægus (Thorn), *Catalpa*, and *Robinia* (Locust tree), can be raised from suckers or root-cuttings, if seeds cannot be got. Any of their varieties are

usually budded or grafted on stocks of the parent species.

Ilex (Holly), *Magnolia*, *Populus* (Poplar), *Platanus* (Plane), and *Salix* (Willow). The Holly is easily raised from cuttings and layers, the second roots readily when layered, and the latter three are propagated in large quantities by winter cuttings. The White Poplar (*Populus alba*) is an exception, as this can only be increased by root-cuttings.

Increasing Hardy Shrubs

The best of our hardy flowering shrubs are grouped under seven natural orders, and a knowledge of the order to which a plant belongs is in most cases a guide to its propagation, as the majority of the species contained in an order are, as a rule, increased by the same methods.

Berberideæ.—This contains *Akebia* and *Berberis*, which are propagated by seeds, cuttings, or layers. *Berberis stenophylla* and *B. Neuberti* do not come true from seed, so that one or both of the other methods mentioned above must be adopted.

Leguminosæ.—In this order such genera as *Cytisus* (Broom), *Genista* (Rock Broom), *Spartium* (Spanish Broom), *Ononis*, *Indigofera*, *Colutea* (Bladder Senna), *Caragana* (Siberian Pea tree), and *Cercis* (Judas tree) should be raised from seed, which is the quickest and best method of propagation. Cuttings of certain forms of *Cytisus* and *Genista* will root readily, but the plants will sometimes die off just as they have

attained flowering size. *Ulex* (Furze, Whin, or Gorse) is propagated by seeds or cuttings, and *Wistarias* by seeds or by layering.

ROSACEÆ.—This includes *Prunus*, the shrubby forms of which can, in the majority of cases, be increased by cuttings or layers; *Spiræa* and *Kerria* (Jews' Mallow), cuttings of which root readily at almost any time of the year; *Exochorda* (Pearl Bush), must be raised from seed to do any good; *Rubus* (Brambles), some of which can be propagated by suckers, and the remainder by pegging the points of the shoots down to form young plants; *Rosa* (Rose), the species of which should be increased by seeds, cuttings, or layers, though seeds will not always come true, as Roses become hybridised very readily; and *Cotoneaster*, which are increased by seeds, cuttings, or layers.

SAXIFRAGEÆ.—In this order *Hydrangea*, *Deutzia*, *Philadelphus* (Mock Orange), *Escallonia*, and *Ribes* (Flowering Currant) are included. All are easily propagated by cuttings taken in almost any season of the year. With the exception of Hydrangea, which should be struck under glass, all the members of this order root readily outdoors in the winter.

CAPRIFOLIACEÆ.—This order contains such genera as *Sambucus* (Elder), *Viburnum*, *Lonicera* (Honeysuckle), *Symphoricarpus* (Snowberry tree), *Abelia*, *Leycesteria*, and *Diervilla*. All are easily propagated by cuttings or by layering. The cuttings can be taken at almost any time of the year, and root

quickly, the young plants attaining a good size by the end of the second year.

ERICACEÆ.—This order includes all the so-called American plants, such as *Pernettya*, *Gaultheria*, *Leucothoë*, *Andromeda*, *Pieris*, *Zenobia*, *Erica* (Heath), *Calluna* (Common Heather, Ling), *Kalmia*, *Ledum*, *Clethra*, and *Rhododendron* (including *Azalea*). These can all be increased by seeds, layering, and, in addition, the first two by division of the old plants. *Erica* and *Calluna* can also be increased by cuttings. Seedlings, of course, make the best plants, but layering is a quicker method, and, in the case of some of the smaller Ericaceæ, one of the easiest. All the Rhododendrons will not root from cuttings, though some of the small-flowered ones strike easily, but practically all may be increased from layers. A few of the showy garden forms cannot be raised from layers, and have to be grafted on stocks of the common *R. ponticum* or *R. catawbiense*.

OLEACEÆ.—This includes both deciduous flowering shrubs and ornamental evergreens, such as *Syringa* (Lilac), *Chionanthus* (Fringe tree), *Jasminum* (Jasmine), *Forsythia*, *Ligustrum* (Privet), *Phillyræa*, and *Osmanthus* being represented. The first two are best propagated by seeds or layers, though the named garden Lilac is usually grafted on stocks of the common *S. vulgaris*, a silly practice. It is a pitiful business keeping down suckers from grafted plants. Ask for Lilacs on their own roots, and much vexation will be saved. A garden should be a place of rest and pleasure, not a hunting-ground for suckers. The

other genera are readily raised by cuttings taken at almost any time of the year, or by layering.

Although the above orders include a considerable number of our best shrubs, several plants must be specially mentioned. The Clematis is increased by seeds, cuttings, or layers in the case of the species, but unfortunately the garden forms are usually grafted on *C. Viticella* or *C. Flammula*, whereas many can be propagated by cuttings, and practically all will root when layered. *Daphne* should be raised from seeds, or by layering, though a common practice is to graft all the rarer Daphnes on *D. Mezereum*, which is another mistake, especially with the evergreen ones, which have a brief existence grafted on a deciduous plant.

In the absence of seeds the following genera must be propagated by layers, viz., *Aucuba*, *Chimonanthus* (Winter Sweet), *Halesia* (Snowdrop tree), *Hamamelis* (Witch Hazel), *Hippophaë* (Sea Buckthorn), and *Myrica* (Candleberry Myrtle). Cuttings of the first will root readily enough, but never seem to succeed afterwards. The female form of *Hippophaë* is best raised from layers, as seedlings usually give a large percentage of male plants. *Aralia* and *Rhus* (Sumach) are increased by seeds or root-cuttings; *Buddleia japonica* is best raised from seeds, and the other Buddleias from cuttings; and practically all other hardy shrubs that have not been specially mentioned are easily propagated by seeds, cuttings, or layers, and the majority of them by all three methods.

Always keep a plant on its own roots whenever possible. Budding and grafting are only makeshifts; but, of course, *if it is impossible* to increase a tree or shrub by any other means, then resort to budding or grafting. It is strange that layering is yet only in its infancy. We have gone on blundering for generations, and propagating wholesale in the most uncertain and unsatisfactory of all ways, that is, by grafting or budding when neither was in the least expedient. Such tricks have hindered the development of English gardening.

TULIP TREE AT RANELAGH (*Winter*).

WINTER BEAUTY OF LIME.

A WINTER GARDEN OF TREES AND SHRUBS

THE budding spring, the ripening summer, the outpoured riches of harvest, appeal to all, physically if not spiritually. But to hundreds of people a winter landscape is dreary beyond expression. They never dream of going into a garden during the dark months; to them its silent lessons are but a dead-letter, nor would they ever wake to the beauty of bare boughs nor pause to note the strange glow of withered Fern fronds in the grey gloom of a foggy day. We are not wholly free from blame in this matter in so far as our gardens are concerned, for spring and summer and autumn all have their share in the garden plan, while winter, too often, stands apart uncared for and unclothed. Yet how much may be done by the right grouping of beautiful trees and shrubs to make the winter garden harmonious and inviting.

"You see, it takes a deal of insight to know what's a-going to be," was a remark, half-apologetic, half-regretful, often made by an old gardener of a school now gone by, when matters horticultural went somewhat athwart of his calculations. The words recur to mind as containing a germ of truth beyond the meaning of the speaker. It has been

well said with regard to deeper matters that foresight must spring from insight, and it may be taken also as a foundation principle of good gardening. For just in proportion as we use our faculties of insight and foresight will our gardens grow, more or less, into a perfect expression of our sense of the ever-changeful, never-ending beauty of Nature.

It must be no cursory glance given to get rid of an unwelcome duty. We must look deep into the meaning of things as they are—a meaning which never lies wholly on the surface—before we can forecast them as they are going to be, and such insight rarely comes by intuition. The seeing eye is given only to a few, though with some it is but sleep-holden and needs no more than to be awakened.

The things that are and the things that are to be. Let us take the thought as company and try to glean some of Nature's own lessons of fitness. How instinctively we seek, for a winter ramble, the shelter of the woodland copse, which is not far distant from any English country habitation. The broad grass drive is hoar with frosty rime in the shadow of the bushes and crisp under foot. Under the trees the ground on either side is carpeted with Ivy. The lithe, trailing stems, wreathed with their shining, taper-fingered leaves, so exquisitely pencilled, are cushioned on the soft, feathery moss, or twine in and out amongst the Hazel stocks, or creep at will up the nearest tree trunk. One can scarcely look at Ivy on a winter's day without a

thrill of admiration, especially this woodland sort, for, mark it well, Nature never encourages the coarse-lived Ivy of common cultivation within her domains. How perfect in its grace is this fine-leaved Ivy, how utterly content with its surroundings, how resolutely cheerful, be the circumstances of weather or situation what they may! Clinging lowly to the ground or mounting to the topmost branch of some tall Pine, it is equally at home, and why should we not agree with that good naturalist, Charles Waterton, in his assertion that forest tree was never injured by its clasping stems? An English plant for our English climate, it may be used to make beautiful an unsightly building, to clothe a decaying tree stump, as bush or border or mantle, in a hundred different ways, yet it is never out of character, and never touches a jarring note.

Then those tall Hollies, see how dauntlessly they stand up above the under-growth of Hazel. How living and warm, in their ruddy glow, are the clustering berries in the glint of the fearless leaves. For expedience sake, their lower branches have been trimmed away, and greatly we gain by it, for otherwise that lovely contrast of their ashen-grey stems would be hidden from our eyes; but over yonder a fine old Holly tree stands alone, which axe and knife have left untouched, and how graceful is the curven sweep of its feathering boughs. No foreign evergreen can excel it for symmetry of form or winter garniture of leaf and fruit. Life is astir, too, in the brown twigs of the Hazel bushes. The infant

year is not more than a week or two old, yet already the tasselled catkins are swinging in the lightest rustle of the sighing wind, and begin to lift up their tiers of small woolly cowls to set free the yellow pollen-dust. And so we may go on our way, and, at every turn, some rugged Yew, or clump of red-stemmed Scotch Fir, or tapering Spruce with hanging russet cones, will stay our steps, and if we look and listen, they will tell us in their own way the story of their perfect fitness for our homely English landscape. Or, if we chance to be in one of the chalky districts of the South Downs, we may come upon Box, the ever young, as it was called of yore, or Juniper, in its bloom of silver grey, as precious as any, to add to the tale of our best native evergreens.

Now it is to a wise choice of evergreens and to their rightful placing that we must look for the basis of our content in the winter garden. The insight of our forefathers foresaw the solid comfort of the rampart of Yew which was fostered of old in many a manor-house garden. It caused them to fence about their dwellings on north and east with a belt of sturdy timber trees, to meet and ward off in their pliant strength the roughest winter gales. It planned the sheltered nut-walk and the pleached alley and the cosy settle, carved out of the thick Box bushes, on the grassy verge of the bowling-green. They took of the materials at hand, and many have since their day blessed the fore-sight which planted, not only for themselves, but

for their children's children. That they were not blind to the rare beauty of foreign trees many a magnificent Cedar of Lebanon and massive Ilex, or deciduous tree—like the fine Tulip trees at Mackery End, beloved of Charles Lamb—bear noble testimony to this hour.

Nothing, perhaps, in the wide range of garden beauty is more pictorial than an ancient Cedar, dusky and glaucous, with cavernous shadows, holding upright the smooth, pale-brown, rounded cones on its flattened branches, or some grand Silver Fir standing alone in its solemn symmetrical beauty, or even, as may now and then be seen, though rarely, some stately Araucaria, wind-sheltered, whose radiating branches sweep down upon the greensward. Others there are, no less pictorial perhaps, nor even less exacting, for none can do without the shelter of a good position, such as the Stone Pines, with corrugated trunk and green spreading head; or again, the graceful fragrant Cypress (*C. lawsoniana*) of more recent date, with its slender pyramidal growth and drooping feathery branches, taking on at the close of winter the ruby-red of the catkins which tell of the coming of the small, bloom-powdered cones.

The desperate hurry, the incessant crowding out of the times in which we live, give little encouragement to the sentiment of planting for posterity, yet some such planting is continually being done. This much must be said, that the last fifty years have seen the introduction of numberless fine trees and

shrubs, the fitness of which for our climate time alone could test. During that period in England, the Mammoth tree of the Yosemite Valley (*Sequoia gigantea*) has been planted in its thousands, and by irony of fate, the giant not seldom finds itself cramped within the limits of a half-acre plot. But leaving out the question of space, it is a tree utterly unsuited to our northern climate, unless under exceptional circumstances, as its scorched and fretted branches on the windward side sufficiently prove; while in itself it is not nearly so grand or suggestive as its near-of-kin, the beautiful Californian Redwood (*S. sempervirens*).

Ah! that burning question of space, how it comes between us and our highest garden aspirations! Have we not all seen the Deodar or the Araucaria trying to exist in a narrow, twelve-foot forecourt, and smiled, if we have not rather been ready to weep, over the crass absurdity of its position? But such mistakes are made every day. Let us think, then, before we plant, of the things that are going to be, and take prudent counsel with ourselves.

Our garden resources, nowadays, are beyond all calculation greater than those of our forefathers, and we rejoice and are glad because of it; but we should let nothing oust from our affections the hardy trees and shrubs, native and naturalised, that are at home in our climate, beautiful in themselves and invaluable in their fitness to give shelter to the more fastidious immigrants from other latitudes.

Shelter, in fact, is as the keynote to the winter

garden. Beauty is killed when leaves that should be green and smiling are bruised and brown, when boughs that should be perfect in grace and curve are twisted and tortured. We may be very sure, too, that such symptoms of discomfort in our gardens will re-act in disquiet on ourselves, whereas the mere sight of tree or bush standing firm in its green bravery through storm and stress tends, it may be unawares, to brace and uplift. Even the familiar Laurel, good as it is when suitably placed, and used not too freely, is constantly scathed and disfigured in damp or low-lying localities. For the same reason, it is doubtful whether Rhododendrons should be planted within range of our windows. Most of them, in severe weather, frightened before they are hurt, put on a melancholy air and droop of leaf which is apt to send a shiver through any shrinking mortal whose vitality is already low enough.

The bare boughs of winter, on the contrary, are never depressing. They sleep, but it is not the sleep of death ; they rest, but while they are resting, we feel that the mystery of life silently works out the fulfilment of the promise of re-awakening. Meanwhile, before the veil of leafage hides so much else that is beautiful from our eyes, we see the things that are, tree trunks in all their majesty of girth and column and fencing bark, the net-work of budding spray, each after its kind distinct, yet each in its own form perfect. Even in mid-winter, the brown gummy buds of the Horse Chestnuts begin to swell

at the ends of the swaying boughs, and the Ash-buds, as they make ready to burst their bonds, put on a deeper hue.

The Beeches keep their silken green tight shut within their scale-bound points, and will not let it unfold an hour too soon; but look at the lovely colouring, now silvern, now golden green, of the Lichen-stains on the smooth grey bark. Contrast it with the deeply-chiselled ribs of the Sweet Chestnut, the rugged armour-plates of the Oak, the thin white tissue of the dainty Silver Birch. It is this diversity, these contrasts, which make up the charm of winter, while the sombre green of Fir and Yew intermingling with the leafless trees gives just the touch of warmth and comfort which winter lacks. If any of these bless our gardens with their gracious presence, let us hesitate long before any trivial inconvenience tempts us into doing away with them. A single group of Silver Birches, one spreading Beech, a clump of Scotch Fir, with a stretch of grass beneath them, is more precious to look out upon in the winter garden than all the borders and rockeries that can be devised. Urge as we may, however, for their own sake, the fitness and constant delight of our native trees and evergreen shrubs, we plead for them, no less, because by their well-advised use our sheltered gardens may become congenial abiding-places for the strangers we may invite within our gates.

Do we profit as much as we might by the wealth of garden beauty, in the way of trees and shrubs,

which for every intent and purpose lies within our reach?

Take Magnolias, for example. They are not sub-tropical trees, as we are apt to think, but fairly hardy, and the Laurel Magnolia, so well known as a beautiful covering for a south wall, is seldom enough seen in standard form. Yet it is one of the most stately of evergreen trees, and it would be hard to find one more worthy of a good position, sheltered from north and easterly winds. The whole outline of the tree is noble, with its broad, shining, russet-backed leaves, a delight to look upon in winter—nor is it shy, when full-grown, of bearing in late summer its scented ivory-white lily-cups. It is too much, however, to expect the lovely-sculptured, crimson-flushed cones, which in warmer climates than ours open about November to disclose their hanging scarlet seeds. Some of the deciduous Magnolias, too, such as the fine Chinese Yulan (*M. conspicua*) and the bushy white-flowered Japanese species (*M. stellata*), are full of interest, even while lifeless. All through the winter we may watch the gradual filling out of the hairy, conical flower-bracts, until at length, in very early spring, the impatient buds can contain themselves no longer, and all too soon, sometimes, push them off altogether that they may creep out of their prison bands.

Every one has his private calendar, and reckons the seasons by a computation of his own, but we may safely say that four long months, if no more, separate the falling of the leaf from its coming again.

Perhaps we ought not to include Magnolias amongst hibernal flowers, though the trees are often white with blossom before the Larch is green; but the list of shrubs which bloom, or are bright with coloured fruit during those four months, would surprise most people who think of winter only as the dead season. The boughs of Sea Buckthorn are loaded with orange berries. Clusters of scarlet peep out of the fresh green of the Skimmia bushes and, so long as the birds do not find them out, *Pernettya* carries a crop of purple and crimson and pink fruit more showy than the modest white flowers of summer. When November days are growing dark, *Coronilla*, in sheltered spots, puts forth its pale clustering yellow flowers. Winter Jasmine, if the flowering branches are not ruthlessly pruned away in autumn, covers its long green shoots with golden stars. The evergreen Clematis (*C. calycina*) is never happier than when clinging to some terrace balustrade where it may have a little kindly shelter, which it repays by wreathing the stone-work with garlands of finely-cut bronzed foliage, hung with creamy freckled bells. More than one kind of hardy Heath, if grown in spreading masses, will deck the garden with sheets of colour the whole winter through.

The Chinese Honeysuckle (*L. Standishii*) arrays itself in its fragile white flowers as early as January. Witch Hazels hang their bare branches with twisted petals of gold or amber or, sometimes (as in *Hamamelis zuccariniana*), borrow the pale-green tint of the under wing of a brimstone butterfly. Soon after

Christmas, Mezereon flushes into rosy purple, and bushes of Winter-sweet (*Chimonanthus fragrans*), independent of a wall (as few people know), will breathe out its perfume from leafless branches studded over with waxen-yellow flowers. It is strange how many of these winter-blooming plants keep their leaves well out of harm's way, brave as their flowers may be. But so it is, and so we learn that if we would gain their fullest winter beauty, we must group them with evergreen shrubs as foil or background.

And what store there is of these to choose from, not green only, but colour-tinged—*Berberis* of many kinds, the shining ordered leaf-rows of *Asara*, the purple tints of *Mahonia* and *Gaultheria*, the bronze of *Andromeda* buds, the deep dull green of *Osmanthus*, the wine red of *Leucothoë*, the pearl grey of *Atriplex*, and a hundred more will respond to our beck and call. Only we must choose with judgment, for whether our lot is cast in north or south, in the black east or soft caressing west, makes all the difference to our choosing. Only be sure that more important still than climate are the wind-breaks we can plan, and the shelter we may contrive. Yet when we are in doubt we can always come back with satisfaction to the quick-growing hardiest shrubs and find in them some fit setting for our garden picture. The slender angled branches of green Broom, the rigid spiny Furze, scented Rosemary, or hoary Lavender—all will lend their varied tints and attributes as we need them. And if a pool or stream only gives us opportunity, what can surpass the

winter colouring of osier twigs—golden and crimson and olive, mirrored in still water or broken into a thousand reflections by the ripple of a running brook.

Perhaps, amongst all the wealth of winter evergreen shrubs the rank of those which show variegation is too much exaggerated. Popular as they are, the effect is not always good, unless more than ordinary care is taken in their placing. Some few, like the best golden and silver Hollies are very beautiful, though not all of these are improvements upon the finest green forms. No variegated shrub, probably, is more universally grown than the Aucuba, and it has excellent points; it is hardy in constitution, handsome in outline, and bold of leaf. By ill-luck, as it happened, more than a hundred years ago, the spotted variety was sent home first from Japan, and became domiciled in English gardens and rooted in English affections before the far more worthy green species made its entry.

It is but a private opinion and not given as dogma that it might possibly be a distinct gain to gardens, large and small, if the spotted Aucuba were practically banished and the true green-leaved forms—some of which are generally beautiful when well set with large coral berries—allowed to take its place. The variegated Oleaster (*Elæagnus pungens*), a remarkably fine shrub when taken by itself, sadly disturbs the repose and dignity of the garden outlook in winter, though doubtless positions might be found in which it would harmonise with its surroundings.

We need only con over, mentally, all the more

familiar examples of shrub variegation to find, probably, that we should do as well without a goodly proportion of them, though we may frankly admit some to be very handsome. The secret of our discontent, possibly, lies in the fact that variegation in plants that are normally green is not, in its essence, a sign of health but of wasting sickness. In any case, whatever our feelings may be on this particular point, it is well worth while to weigh the merits of each shrub, variegated or green, before we plant it, not only individually, but in relation to its neighbourhood to other garden associates, and more especially with regard to its winter aspect.

Mr. Bean writes as follows about the winter beauty of trees and shrubs: "Even in November and December there are trees and shrubs that brighten the garden with their coloured bark and fruits. Although not abundant, the members of this class are not used so extensively as they might be.

"Among Willows, for instance, there are the golden and red-barked varieties of *Salix vitellina*. These, though scarcely ever seen, are capable, when properly treated, of producing bright warm effects that are especially charming from November to February. When allowed to grow naturally this Willow—known popularly as the Golden Osier—forms a graceful tree of large size. Its twigs have a golden or red tinge, according to the variety, but on fully-grown trees these twigs are not large, and as it is, of course, the bark of the preceding summer's

growth only that is coloured no very marked colour effect is produced. To obtain a really bright patch of colour it is necessary to plant these Willows in goodly-sized groups and to prune them hard back every spring. By treating them in this way a great cluster of long, wand-like growths is made every year, the bark over the whole of which becomes a bright yellow or red as winter approaches. An effective group is produced by mixing the red and yellow-barked varieties.

"Another striking Willow is *Salix daphnoides*. The young bark of this species is covered with a thick glaucous or vivid blue-white 'bloom.' *S. acutifolia* is similarly distinguished, though not quite so markedly. Different from any of these Willows, too, is the variety of *S. triandra*, with purplish-brown bark. To bring out fully the ornamental qualities of these Willows they should be treated as advised for *Salix vitellina*. All these Willows are especially charming near the edge of water. Not only are their moisture-loving propensities satisfied, but their beauty is doubled by reflection in the water.

"Somewhat similar to the Willows in the character of their bark, but useful in being adapted for drier situations, are the Cornels (*Cornus*). The best of the genus in this connexion are *Cornus alba* and its variety *sibirica*. They produce bark which for one or two seasons remains a bright red during the time the branches are leafless. A group of *Cornus alba*, with *Chionodoxa Lucilia* or Winter Aconite planted thickly beneath, gives a very pleasing bit of colour early in

the year. A yellow-barked form of *Cornus stolonifera*, known as *flaviramea*, deserves mention.

"Several shrubs are notable for the particularly bright green of their bark. The forms of *Kerria japonica* and *Neillia* are very bright during the winter on this account, but still more effective is a near ally, *Stephanandra kanakæ*, a comparatively new shrub, also from Japan, but of little value in any other respect. Finally, I may mention the Rubuses with white stems. As in *Salix daphnoides*, the bark is covered with the waxy secretion known as 'bloom,' and of a blue-tinted white. Some six or seven species of Rubus have this character. Of those obtainable from nurseries, *R. biflorus*, a Himalayan species often to be had from dealers under the erroneous name of *Rubus leucodermis*, is the best. Dr. A. Henry has introduced a Chinese species, *Rubus lasiostylus*, which is even better than *biflorus;* the bloom is more distinctly blue, and the stems sturdier and more self-supporting. The species is, however, an extremely rare one in cultivation. It is scarcely necessary to repeat how essential it is that these Brambles and Cornels should be planted in bold groups.

"Among trees the most noteworthy as regards the colour of their bark are the Birches. The beauty of the Common White Birch has not been overlooked by planters. A single specimen or a few grouped together make a bright winter picture when associated with evergreens. The Canoe Birch of North America (*Betula papyrifera*) has a bark of an even

purer white than our native species. The Yellow Birch (*B. lutea*) shows warm orange-brown tints on the more recently exposed surfaces of its bark. The bark of the River Birch (*B. nigra*) is not brightly coloured, being of a dull dark brown, but it gives the tree a notably curious aspect owing to the way it stands out from the trunk and branches in great ragged-looking flakes.

A Flower Garden in Winter

"It is possible to make a new feature in gardens by setting apart a piece of ground exclusively for the cultivation of trees, shrubs, and bulbs—in short, any plants that flower or are bright with fruit or bark between, say, the beginning of November and the end of February. One might term it 'an out-door winter garden.' For the purpose there would be required a well-drained piece of ground, the soil of which was fertile and open. The situation should be fully exposed to the south and west, but guarded well on the north and east sides by a thick belt of evergreen trees and shrubs. The shelter would be still more complete if the site sloped rather steeply to the south-west. Such shelter would be welcome, not only to the plants that grew there, but to those who might visit and tend them. Some of the more noteworthy trees and shrubs with ornamental barks I have already mentioned. Plants that carry their fruit into winter might be included, such as the Hollies, especially the yellow-berried Holly; *Cra-*

A WITCH HAZEL IN FLOWER: HAMAMELIS JAPONICA VAR ZUCCARINIANA.

ULMUS ALATA.

tægus Crus-Galli and C. *spathulata; Cotoneaster rotundifolia*, which is the best of all the Cotoneasters, and frequently carries its bright-scarlet berries till March; and *Hippophæ rhamnoides*, the Sea Buckthorn, whose orange-coloured fruits are borne in such profusion and retain their colour till past Christmas if the frosts are not too severe. The scarlet-fruited *Skimmia japonica* and its varieties are very ornamental during the winter months, but of these (as well as the Hippophæ) it is necessary to grow male and female plants together. Groups of variegated evergreens would not only help to give shelter and warmth, but would also add to the brightness of the garden. The best of them are the golden and silver variegated Elæagnuses, the Hollies of a similar character, and the best of the Aucubas, of which there are now some very fine forms; the female plants are also very ornamental as fruit-bearers. *Pinus sylvestris aurea*, a variety of the Scotch Pine that turns golden in winter but is green at other seasons, and *Cupressus macrocarpa lutea* are the two best Conifers of their class. Many of the variegated Conifers lose most or all of their colour as autumn and winter approach.

"With regard to the trees and shrubs that bear flowers between November and February, the number is not, of course, great; still, they constitute a group that is larger, perhaps, than is generally supposed. The following list, which comprises all that I can call to mind, may be useful even to those who would not intend to bring them together in one spot.

Some country houses are only occupied during the shooting and hunting seasons, and these winter-flowering plants are of especial value in such places.

November

Arbutus hybrida.
„ Unedo and vars.
Daphne Mezereum grandiflora.
Elæagnus glabra, macrophylla, and pungens (all delightfully fragrant).
Hamamelis virginica.
Jasminum nudiflorum.
Lonicera fragrantissima.
„ Standishii.

December and January

Chimonanthus fragrans.
Clematis calycina.
Cratægus monogyna præcox (Glastonbury Thorn).
Erica mediterranea hybrida.
Erica carnea.
„ „ alba.
Garrya elliptica.
Viburnum Tinus.

February and early March

Berberis japonica.
„ nepalensis.
Cornus Mas.
Corylopsis spicata.
Daphne blagayana.
„ Laureola.
„ Mezereum.
„ „ var. alba.
„ oleoides.
Erica mediterranea.
Hamamelis arborea.
„ japonica.
„ mollis.
Hamamelis zuccariniana.
Prunus davidiana (pink and white forms).
„ amygdalus persicoides.
Populus tremuloides pendula.
Parrotia persica.
Pyrus japonica.
Rhododendron altaclarense.
„ dauricum.
„ nobleanum.
„ præcox.

AUTUMN COLOURS

THERE is a certain amount of mystery about the autumn colouring of the foliage of hardy trees and shrubs in this country, and we have never yet ascertained with any degree of exactness the conditions that produce the richest and brightest colours. Probably the conditions most favourable generally are provided by a good growing season—that is, a warm, moist summer—followed by a dry, sunny autumn. But it frequently happens after what one would regard as favourable seasons, that species which are usually quite trustworthy in this matter fail to colour well. Probably one set of conditions does not suit all trees and shrubs in this respect. To produce the colouration of the leaf just before it falls certain subtle chemical changes in its composition take place. And to bring about these changes certain conditions in regard to sunlight, temperature, and moisture are necessary. But in a climate such as that of Britain, where the seasons are never alike two years together, we can never hope to obtain the same regularity of autumnal colouring that characterises the vegetation, for instance, of the Eastern United States. Still, when all is said, we possess in our gardens a large number of trees and shrubs and climbers that are delightful

in their autumnal livery of crimson, purple, scarlet, or gold. It is curious that every season we may notice species not usually conspicuous for their autumn tints beautifully coloured.

An over-vigorous, sappy growth, often the result of a wet, warm autumn or too rich a soil, is certainly detrimental to autumn colouring. *Rhus cotinoides*, an American Sumach, worth growing for the beauty of its colours in autumn, is one of the most unfailing in this matter. But young plants, put out in well-trenched, heavily-manured soil, will often fail to colour at all till they get older and less vigorous. The most beautifully-coloured examples of this Sumach that we have seen grow in rather light sandy soil. We have frequently noticed, too, that various species of Vine (*Vitis*) when starved in pots will colour exquisitely, whilst others, planted out in the ordinary way, completely fail. We believe, therefore, when planting with a view to the production of autumnal colour, any great enrichment of the soil is neither necessary nor advisable, provided it is of moderate quality to start with.

In the following notes, brief mention is made of some of the best trees, shrubs, and climbers that colour in autumn:—

Trees

First among these are the American Red Oaks. Undoubtedly the best of these is a variety of *Quercus coccinea* known as *splendens* and *grayana*. This not only turns to a fine scarlet crimson, but it retains its

foliage for some weeks after the colour has been acquired—sometimes almost up to Christmas. Other good Oaks, not so certain, however, as the preceding, are *Quercus marylandica* (or *nigra*), *Q. heterophylla*, *Q. imbricaria*, and *Q. palustris*, all of which turn red. The Tupelo tree (*Nyssa sylvatica*) turns a fine burnished bronzy red. A tree remarkable for the size of its leaves, and especially for the rich golden yellow they put on in autumn, is *Carya tomentosa*, but, like most of the Hickories, it is scarcely known in gardens. *Carya sulcata* is somewhat similar. The Common Elm is usually very beautiful in the soft yellow tints of its leaves in autumn, but another Elm of more distinct aspect is *Ulmus pumila*, a low tree whose small leaves are retained till late in the year, and turn golden yellow before they fall. *Liquidambar styraciflua* has long been valued for its fading foliage of purple red, but not so well known is the lovely yellow of the Fern-like foliage of the Honey Locust (*Gleditschia triacanthos*). The Tulip tree (*Liriodendron*), the Nettle trees (*Celtis*), the *Zelkowas*, and several of the Birches turn yellow, one of the best of the Birches being *Betula corylifolia*, which turns a rich orange yellow.

Among commoner trees the yellow of the Horse Chestnut, the lovely crimson of the Wild Cherry, the golden shades of the Black and Lombardy Poplars, add much to the beauty of every autumn. Several of the Maples are noteworthy in this respect, more especially the numerous varieties of Japanese Maples (*Acer palmatum* and *A. japonicum*), these, as well as

the Mandshurian *Acer Ginnala*, turning to various shades of red. The Common Sycamore and Norway Maple change to yellow, but Schwedler's variety of the latter becomes red. Other trees that deserve mention are *Amelanchier canadensis*, whose foliage changes to lovely crimson shades in autumn; *Kœlreuteria japonica*, soft yellow; *Pyrus torminalis*, bronzy red; *Gingko biloba*, pale gold; *Cladrastis tinctoria*, yellow; *Parrotia persica* and *Hamamelis*, bronzy red and yellow. The Common Beech is nearly always beautiful, changing first to yellow, then to warm brown tints. Among Conifers the yellow-leaved variety (*aurea*) of the Scotch Pine is remarkable in retaining its colour during the winter months only, becoming green in spring and summer. *Retinospora squarrosa* and *Cryptomeria elegans* turn bronzy red in winter. The warm red-brown tints of the deciduous Cypress are charming.

SHRUBS

The Sumachs (*Rhus*) furnish some of the most striking of autumn-colouring shrubs; the best of them, *R. cotinoides*, has been already described; other fine species are *R. typhina*, *R. glabra* (with the cut-leaved variety *laciniata*), and *R. Toxicodendron*, all of which turn red. The Venetian Sumach, *R. Cotinus*, becomes yellow. *Berberis Thunbergi*, which dies off a rich scarlet, is so beautiful in autumn that on some estates it has been planted in great quantity, not only for cover, but so that sportsmen may enjoy its colour during the shooting season. Its evergreen

ally, *B. Aquifolium*, turns a glowing red or purple after the first frosts. The Ghent Azaleas almost always colour richly, either deep glowing crimson, bronzy red, or gold ; and of other ericaceous plants the warm tints of *Pieris mariana* and the rich crimson of the *Enkianthus* should be mentioned. The taller American *Vacciniums* (*corymbosum* and its various forms) are always lovely. Our native Guelder Rose (*Viburnum Opulus*) becomes crimson in autumn, whilst the Common Hazel and *Rhamnus Frangula* often produce fine effects in yellow. The feathery foliage of *Spiræa Thunbergi* is singularly beautiful when it changes from its natural pale green to crimson ; and two other Japanese shrubs (both, unfortunately, very rare) are remarkable for their autumnal beauty. These are *Disanthus cercidifolia*, an ally of the Witch Hazels, lovely claret colour, and *Viburnum alnifolium*, crimson.

Other noteworthy shrubs are *Fothergilla alnifolia*, rich red ; *Euonymus alatus*, crimson ; *Deutzia crenata*, yellow ; and *Pyrus arbutifolia*, red. The common Brambles of our woods should not be passed over without mention ; they turn a rich glowing red, and for their autumnal beauty alone may be used as undergrowth in wilder parts of the garden and woodland.

CLIMBERS

First among these, of course, is Veitch's Ampelopsis, the finest of all deciduous climbers for walls, being self-supporting and changing to crimson in

autumn. *Vitis Coignetiæ* is one of the noblest of all Vines, and turns crimson also. Other Vines useful in this respect are the Teinturier Vine, purple; *V. Romaneti*, red; and the Virginian Creeper, especially that variety known as *muralis* or *Engelmannii*, which clings to walls or tree trunks without any artificial support, and acquires beautiful red shades in autumn. Among Honeysuckles, *Lonicera japonica var. flexuosa* is noteworthy for the fine red purple of its decaying leaves.

TREES AND SHRUBS WITH FINE FRUITS

THE most important of all the groups of trees and shrubs, for their fruit, is the one comprising the hardy species of the Rose order. This includes, of course, besides the Roses, such trees and shrubs as the Thorns, Crabs, and Cotoneasters. Among the the Thorns (Cratægus) are many very handsome sorts giving variety in size and colour of the fruits. It is unfortunate that many of them fall early and get spoilt by birds. At the same time birds add so greatly to the delight of the garden that we may well overlook their depredations. By many, indeed, these fruiting trees will be considered worth growing for the encouragement they give to bird-life. It may be well to remind planters that a considerable number of these fruiting trees and shrubs bear male flowers on one plant, female on another. People are often at a loss to understand why their Sea Buckthorns or Aucubas or Skimmias do not fruit, when the simple reason is that the plants are all male (or pollen-bearing), or that the female ones have no males to fertilise them. As a general rule, if these shrubs are grouped, one male to eight or ten females is a proper proportion. As plants raised from seeds come in about equal proportions of both

sexes, it is necessary to select the females and keep just sufficient males to pollenise them, in order that the full beauty of the species as a fruit-bearer may be obtained. With Skimmias and Aucubas the proper proportions can be obtained by means of cuttings.

The following hardy trees and shrubs are the most conspicuous for the beauty of their fruits:—

ARBUTUS UNEDO.—A native of Western Ireland, has strawberry-like fruits of a bright-scarlet colour.

AILANTUS GLANDULOSA, a fine tree over 50 feet high, is very beautiful when covered with its red and yellow-winged fruits; there are male and female plants.

AUCUBAS, grown at first for their ornamental foliage merely, have latterly come into prominence as fruit-bearers; the female plants bear clusters of bright-red berries which remain long on the branches and are very attractive in winter.

BERBERIS.—The fruits of the Berberries are mostly covered with a plum-coloured bloom as in *B. Aquifolium* and *B. Darwinii*, but none of them is handsomer than our native *B. vulgaris* and its varieties. These have pendent racemes of fruits, varying in colour from the typical orange scarlet to white, purple, and black. *B. Thunbergi* coral-red, very beautiful.

CRATÆGUS.—The finest of all the Thorns is *C. Pyracantha*, well named by the French "Buisson ardent." This shrub or small tree is valuable as a graceful evergreen, and when clothed (as it nearly

always is in autumn) with its brilliant clusters of orange-red haws, it is one of the most beautiful objects in the garden. It is quite hardy in the open, but bears fruits more abundantly when planted against a wall. In that position also it is more easily protected from birds, which soon destroy the beauty of plants in the open. The Cockspur Thorn (*C. Crus Galli*) has several varieties, all producing pendent clusters of scarlet haws. The varieties like *pyracanthifolia*, with narrow leaves and flat-topped habit, are the best in this respect; they retain the fruits well into the winter, and are not eaten by birds so freely as many are. The haws of *C. cordata*, the Washington Thorn, are small, but a brilliant orange. *C. punctata*, *C. Azarolus*, and *C. pinnatifida* have the largest haws of any, and they are of a deep red, but fall early; the two first, however, are variable, and forms with yellow and other coloured haws belong to them. Those of *C. macracantha* are bright red, and in favourable years are so plentiful as to make the tree wondrously beautiful. *C. coccinea* and *C. mollis* have also red haws, larger than those of *C. macracantha*, but they fall soon after they are ripe. The Common Hawthorn is pretty, but more noteworthy is its variety *aurea*, with bright-yellow haws. In *C. oliveriana* they are black. The Tansy-leaved Thorn (*C. tanacetifolia*) has large yellow fruits, not badly flavoured, and with the fragrance of Apples. *C. orientalis* has haws of a bright sealing-wax red, but in its variety *sanguinea* they are of a deeper shade.

COTONEASTERS. — Not enough use is made of Cotoneasters in gardens. They grow well in almost any soil, and are all marked by elegant or neat habit. They are very pretty when in flower, but it is in autumn, when laden with fruits, that they attain their greatest beauty. One of the tallest of them is *C. frigida*, and this bears a great abundance of rich scarlet-red berries in flat clusters. In the nearly allied *C. bacillaris* they are almost black. *C. rotundifolia* is a dwarfer shrub, but the finest of all the Cotoneasters for its fruit; it grows about 4 feet high, and has small, very dark green, persistent leaves; the fruits are about the size and shape of the haws of the Common Hawthorn, and are brilliant scarlet red; they are ripe in October, and from then till March make one of the most beautiful of winter pictures. In *C. buxifolia* the fruit is very abundant, but the red colour is not so bright as in the preceding. *C. horizontalis*, now getting to be a well-known shrub, has very pretty, globose, bright-red fruits, small but freely borne. *C. Simonsii*, of medium height, has brilliant red berries, as has *C. acuminata*, a near ally, but taller. The dwarfest section of Cotoneaster, viz., *thymifolia*, *microphylla* and its variety *glacialis* (or *congesta*), which are so useful for rockeries, have all scarlet berries.

CELASTRUS ARTICULATUS is a vigorous climber from Eastern Asia, remarkable for the great beauty of its fruits, which are golden yellow within, and when ripe split open and reveal the shining scarlet-coated seeds. *C. scandens* has orange-coloured seeds.

CORIARIA JAPONICA is very beautiful in autumn, when it succeeds as well as it does with Canon Ellacombe at Bitton, the fruits being covered then with the persistent petals which are of a lovely coral red.

CORNUS CAPITATA (*Benthamia fragifera*) only succeeds to perfection in the south-western counties; its strawberry-like red fruits are very handsome.

COPROSMA ACEROSA is a dwarf New Zealand shrub suitable for the rockery; it has variously-shaded, transparent, blue-green berries.

ELÆAGNUS MULTIFLORA (or *E. longipes*) is the most ornamental in the genus with regard to its fruits. They are remarkably abundant, orange-coloured, and specked with reddish scales.

EUONYMUS EUROPÆUS, our native "Spindle tree," is most beautiful in autumn, when, after a favourable season, it is covered with its open red fruits revealing the orange-coloured seeds within.

FRAXINUS MARIESII is one of Messrs. Veitch's introductions from Japan, and is a dwarf tree, one of the "Manna" Ashes; the thin keys are of a bronzy-red colour and pretty.

GLEDITSCHIA TRIACANTHOS is the "Honey Locust." The pods are not brightly coloured, being at first green, then brown, but they are long, thin, and wavy, like crooked scimitars, and hanging in numbers on the tree; have a very curious and (in this country) uncommon aspect.

HEDERA (Ivy).—Some of the "tree" forms of Ivy produce berries freely; the most ornamental of them

are the red, yellow, and orange-coloured varieties of *H. Helix arborescens*.

HYMENANTHERA CRASSIFÒLIA, from New Zealand, is a dense-growing, stiff-branched, dwarf shrub, chiefly noteworthy for the white berries it bears.

HYPERICUMS.—*H. Androsæmum* and *H. elatum* produce rather handsome clusters of black fruits.

HIPPOPHAE RHAMNOIDES, the Sea Buckthorn, is one of the most brilliantly coloured of all berry-bearing shrubs. It produces them in marvellous profusion, and they are bright-orange coloured. Birds do not molest the berries, and unless caught by severe frosts (which turn them grey) they lighten the garden wonderfully up to, and sometimes after, the New Year. The necessity of growing both sexes of plants has already been noted, but isolated females may be artificially impregnated by shaking pollen over them when in flower.

ILEX (Holly).—The berries of the Holly are so well known that we need only mention the yellow-berried one (*fructu-luteo*), which is not common, but very effective in winter.

LIGUSTRUM.—The Privets are of little consequence as fruit-bearing shrubs, and only *L. sinense* need be mentioned; it is frequently very striking in early winter, being covered then with great clusters of purple-black, shot-like berries.

LYCIUM CHINENSE.—Nearly all the Box Thorns in this country belong to this species. As for *L. europæum* and *L. barbarum*, the names are very common, but the plants themselves very rare. *L. chinense* is very

ornamental in the fall of the year, its long graceful branches being well furnished with rich red berries. *L. rhombifolium* is one of its forms.

MAGNOLIA TRIPETALA is often very striking in the fall of the year because of its large upright fruits of a reddish-purple colour.

MACLURA AURANTIACA, the "Osage Orange," bears a remarkable orange-coloured fruit 2 to 3 inches in diameter. The tree is quite hardy, but we have not heard of its bearing fruit in this country. This is perhaps because male and female flowers occur on different plants.

PERNETTYA MUCRONATA.—First among ericaceous plants for beauty in fruit is this Magellanic plant and its varieties. It is dwarf and bushy, with small white flowers followed by enormous quantities of berries about the size of peas. These vary in colour from white to deep crimson, and are undoubtedly some of the most valuable of all hardy berry-bearing shrubs.

PALIURUS AUSTRALIS (Christ's Thorn) has flat, disk-like fruits, freely borne in suitable years; they are green, and if not particularly ornamental, are very quaint and interesting.

PTELEA TRIFOLIATA.—The same may be said of the abundant clusters of hop-like fruits seen in this tree.

PYRUS.—In this genus, which includes the Mountain Ash, the Crabs, and the White Beam trees, there is a great wealth of beautiful fruiting trees. The Mountain Ash or Rowan tree (*P. Aucuparia*),

when laden with its hanging corymbs of rich scarlet berries is a delightful picture, and it reaches its full beauty in August. Not so well known is the variety *fructu-luteo*, with yellow fruits. A near relative of the Rowan tree is *P. americana*, its New World representative, but it is not so beautiful. The fruit is almost identical, but the tree is of a stiff and less graceful aspect. The new *P. thianschanica*, which also belongs to the Rowan tree group, has bright-red, globose berries. Perhaps of all the genus Pyrus, none on the whole are so beautiful in autumn as the Crabs. *P. baccata*, the Siberian Crab, with its bright-red, cherry-like fruits, and *P. Ringo* from Japan, with bright-yellow ones, are the best of the true species. The hybrid "John Downie" Crab is also very beautiful in autumn.

The flowering QUINCES are not particularly attractive in regard to the colour of their fruits, but some of them—notably those of the dwarf *Pyrus Maulei*—are very sweetly scented.

Some very handsome fruits are borne by the various White Beam trees (*Pyrus Aria* and its allies). Perhaps the best of them is *P. lanata* (or *Sorbus majestica*), which has flat clusters of bright-red berries. But many of the varieties of *P. Aria* itself are very attractive. One of the latest additions to this group is *P. alnifolia*, a neat-habited small tree from Japan and China. It has oblong coral-red fruits.

ROSA.—Beauty at fruiting time is an almost proverbial attribute of the Roses. None is more

beautiful than our native Dog Rose (*R. canina*). Though in many an English hedgerow, an out-of-the-way corner in many a garden might be given up to the Dog Rose and its varieties for the sake of their wealth of scarlet hips in autumn. *R. tomentosa* and *R. mollis* are other red-fruited natives of Britain. All the members of the Scotch Rose group (*pimpinellifolia*) have black fruits. Of exotic species, one of the most valuable is *R. rugosa;* its flat, orange-shaped hips are so abundant and brightly coloured that they make a brilliant picture. *R. microphylla* has yellow prickly fruits, whilst those of *R. macrophylla* are pear-shaped and scarlet. The deep-crimson hips of *R. pomifera*, covered with bristly hairs like large gooseberries, are as remarkable as any. Some of the American species, although the fruits are usually small, are handsome, such as *R. nutkana* and *R. carolina*. The elongated, pear-shaped fruits of *R. alpina* and its variety *pyrenaica* are bright red, and have a pleasant, resinous odour when rubbed.

RHAPHITHAMNUS CYANOCARPUS can only be grown outside against a wall, or in Cornwall or similar localities, but where it will succeed it is well worth growing, not only for its pale-blue flowers, but for the bright-blue fruits that follow them.

Some of the RHAMNUS, such as the native *R. catharticus* and *R. Frangula*, bear abundant crops of purple-black berries.

The dense pyramidal fruit-clusters of the Stag-horn Sumach (*Rhus typhina*) are often attractive,

being covered with crimson hairs. Those of *R. glabra* are similarly coloured.

RUBUS PHŒNICOLASIUS has spread in cultivation recently, and has beautiful scarlet berries. It is hardy enough, but birds are so attracted by the bright colour, that it requires protection from them when in fruit.

SAMBUCUS.—The scarlet-berried Elder, *S. racemosus*, is by far the handsomest of the genus, but although it flowers freely enough, it is very uncertain in producing its fruits. *S. glauca*, from the West United States, produces large, flat clusters of blue-white berries, and there is a striking white-fruited variety of *S. nigra* called *leucocarpa*.

THE SNOWBERRY (*Symphoricarpus racemosus*) should always have a place in the garden for the sake of its clusters of large pure white berries, which remain long on the plants.

VIBURNUM.—There are several very handsome fruiting species in this genus, no finer, however, than the native *V. Opulus*, or Guelder Rose, with red fruits, and its variety *fructu-luteo* with yellow ones. In the other native species, *V. Lantana*, they are at first red, ultimately black. Several of the Viburnums are noteworthy for the blue or blue-black fruits; of these are *dentatum*, *molle*, *cassinoides*, and *nudum*. Those of the evergreen *V. Tinus* are also dark blue, but, as with the other blue-fruited species, they are not frequently borne in profusion in the average climate of Britain.

VITIS HETEROPHYLLA and its variety *humulifolia*, bear singularly beautiful clusters of pale china-blue berries. To induce them to fruit freely, however, the plants require a warm, sunny wall, and rather restricted root-room.

WEEPING TREES AND THEIR USES

IT is not at all easy to define special uses for trees of weeping habit, but it is safe to use them nearly singly and not in immediate connexion with trees of quite upright form. The point in the weeping tree is a certain grace of drooping line, such as one enjoys in the drooping racemes of many of the papilionaceous flowers such as Wistaria, Laburnum, and Robinia. Nothing is gained by accentuating the peculiarity by a direct association with trees of an opposite way of growth. It is better rather to place the weeping trees near rounded masses of shrub and small tree—for example, a Weeping Birch would group well with a clump of Rhododendrons.

Near water weeping trees seem to be specially effective. An instance of this is shown in the familiar Weeping Willow, but one at a time seems as much as is wanted.

As a general rule, we strongly advocate planting in groups, whether in the case of trees, shrubs, or flowering plants, but the weeping trees are less suited for grouping than any others. One Weeping Willow is all very well, but a whole grove of them would be monotonous and tiresome.

The habit of some of the weeping trees can be directly turned to account in the making of arbours

BABYLONIAN WILLOW BY WATERSIDE (*Kew*).

WEEPING ASH; PALACE GARDENS, DALKEITH.

and pergolas; for by planting the large-leaved Weeping Elm or the Weeping Ash at the back and on each side in the case of an arbour, or alternately on each side of the walk for a pergola, a living shelter may be made in a very few years. The trees in this case are standards pollarded at about 8 feet from the ground, the form in which they are generally sent out from the nursery.

(i.) NATURALLY PENDULOUS SPECIES AND VARIETIES, *i.e.* COMING TRUE FROM SEED

Asterisk denotes those to choose first.

Tilia (Lime or Linden) petiolaris.
Genista æthnensis (shrubby).
* Prunus pendula (Weeping Japanese Cherry).
Forsythia suspensa (shrubby).
* Salix (Willow) alba cærulea pendula.
„ „ vitellina pendula.
* „ „ babylonica.
„ „ „ annularis.
„ „ „ Salamoni.
„ „ elegantissima.

(ii.) PENDULOUS VARIETIES THAT HAVE ORIGINATED AS "SPORTS," PROPAGATED BY GRAFTS, CUTTINGS, OR LAYERS

* Ilex (Holly) Aquifolium (green and variegated).
Acer (Maple) Negundo pendula.
Rhus Cotinus pendula.
Laburnum vulgare pendulum (Weeping Laburnum).
Cytisus scoparius pendulus.
Caragana (Pea tree) arborescens pendula.
Sophora japonica pendula.

* Prunus Amygdalus pendula (Weeping Almond).
* „ Avium pendula (Weeping Wild Cherry).
„ acida semperflorens.
* „ Mahaleb pendula (Weeping Mahaleb Cherry).
„ Padus pendula (Weeping Bird Cherry).
* Cratægus Oxycantha (Hawthorn), red and white flowered.
Sambucus nigra pendula (Weeping Elder).
* Fraxinus excelsior pendula (Weeping Ash).
„ „ aurea (golden-leaved) pendula.
„ „ pendula wentworthii.
„ parviflora pendula.
Ulmus (Elm) americana pendula.
„ „ campestris pendula.
„ „ „ antarctica pendula.
„ „ „ suberosa pendula.
„ „ fulva pendula.
* „ „ montana pendula.
„ „ „ Pitteursii pendula.
Zelkowa crenata pendula.
Morus (Mulberry) alba pendula.
* Betula (Birch) alba pendula.
* „ „ „ Youngi.
„ „ „ purpurea pendula.
Alnus (Alder) incana pendula.
Carpinus (Hornbeam) Betulus pendula.
Coryllus Avellana (Common Hazel) pendula.
Quercus (Oak) pedunculata pendula.
„ „ rubra pendula.
* Fagus (Beech) sylvatica pendula.
„ „ „ miltonensis.
„ „ „ remillyensis.
* Salix (Willow) Caprea pendula.
* „ „ purpurea pendula.
„ „ „ Scharfenbergensis.
„ „ repens argentea.
* Populus tremula (Aspen) pendula.
* „ tremuloides pendula.

WEEPING ASPEN IN FLOWER.

WEEPING ELM ON LAWN.

(iii.) Conifers

Cupressus lawsoniana glauca pendula.
" " gracilis pendula.
" " pendula vera.
" " gracillima.
" nootkatensis pendula.
Cedrus atlantica pendula.
Gingko biloba pendula.
Juniperus (Juniper) virginiana pendula.
Larix europæa (Common Larch) pendula.
Thuya orientalis pendula.
" flagelliformis.
Taxodium distichum (Deciduous Cypress) pendulum.
Tsuga canadensis pendula.
Taxus (Yew) baccata pendula.
" " " gracilis pendula.
" " " Dovastoni. There is a fine specimen of this in Barron's nursery at Borrowash.

THE USE OF VARIEGATED TREES AND SHRUBS

THE best use of trees and shrubs with coloured or variegated foliage is not very easy to determine, though it may be possible to give a few useful suggestions. The usual way of planting them here and there among mixed masses of evergreen and deciduous growths is perhaps the worst way of all. All good planting must be done with much thought and care, and these plants of coloured foliage, that are necessarily more conspicuous than others, want the most careful placing of any.

One excellent use of evergreen trees and shrubs with golden colouring, such as the Gold Hollies, Cypresses, Yews, and Privets is to make them into a cheerful bit of outdoor winter garden. The Gold-leaved Privet is a delightful thing in early winter, and though Wild Privet, untouched by the knife, is a deciduous shrub, the clipped Privets of our gardens usually hold their leaves throughout the winter. With these the variegated Japan Honeysuckle might be freely used, much of its yellow veining turning to a bright red in winter. *Cassinia fulvida* is another good winter shrub with its tiny gold-backed leaves. The pretty bushes of this neat New Zealander are

apt to grow somewhat straggling, but the crowded little branches are the very thing that is wanted through the winter as cut greenery to go with winter flowers, whether hardy or from under glass. If these are cut a foot long the bush is kept in shape, and a valuable supply of stuff for house decoration is provided.

A half or even quarter acre of well-arranged planting of these gold-variegated shrubs has a surprisingly cheery effect in winter, making a kind of sunlight of its own when skies are grey, and a comfortable shelter when winds are keen.

In summer, too, it will be beautiful if the spaces between the shrubs are cleverly planted, for preference, with plants of white or pale-yellow flowers, such as White Foxglove, *Œnothera lamarckiana*, white and pale-yellow *Hibiscus ficifolius*, *Liliums auratum*, *giganteum*, *speciosum*, and *longifolium*; White Everlasting Pea trained loosely through any near branches; *Nicotiana affinis* and *N. sylvestris*; and close to the path hardy Ferns of pale-green frondage, such as the Lady Fern; with clumps of plants of golden foliage like the Gold Valerian and Gold Nettle. A shrub of variegated foliage, planted without special attention, and coming suddenly in a grouping of others of an average green colour is made unduly conspicuous. It should be led up to by neighbours whose colouring gradually assimilates with its own. The sudden effect of colouring is all very well in the nurseryman's show borders, where the object is to attract attention to showy individuals, but in

our gardens we want the effect of well-arranged pictures rather than that of shop windows.

A variegated plant to be of real value in the garden must have clear, bright, and abundant red and yellow or white markings, not dotted or merely margined with colour. So many worthless shrubs with poor variegation have been named and offered for sale that it is unwise to buy them from a catalogue. We may repeat the advice already given, which is to see them first.

Trees and shrubs with coloured foliage are of several kinds. Most common of all are those which have leaves blotched or edged with golden or creamy yellow and white, such as the variegated Hollies and Elæagnuses. Then there are those which are only coloured at a certain season, like *Neillia opulifolia aurea*. This has leaves of a beautiful self yellow colour when they unfold in spring, but become green as the summer advances; or the variegated Plane (*Platanus acerifolia Süttneri*), which is only variegated in late summer and autumn.

Finally, there are those, like the Purple Hazel or Purple Beech, which have leaves of one colour and remain almost of the same shade whilst they are on the tree.

On the whole the plants that retain their colour till late summer and autumn, or acquire it then, are most valuable, because very few trees and shrubs are then in flower.

Variegated trees and shrubs must not be planted too plentifully, and studiously avoid all spotty effects.

Many a garden would be improved by bringing the variegated shrubs it contains together so as to produce a few broad masses of colour. Some of these shrubs, like Spath's Cornel, or the Golden Elder, may, in large gardens especially, be planted alone in large beds or groups. The large trees, like the Purple Beech, can stand by themselves.

The following list contains one hundred of the finest of variegated trees and shrubs:—

Trees

Acer Negundo variegatum, creamy white.
„ Negundo aureum, golden entirely.
„ platanoides Schwedleri, soft red in spring.
„ Pseudo-platanus flavo-marginatum, the "Corstorphine" Sycamore, one of the largest of variegated trees.
Alnus glutinosa aurea, wholly yellow.
Betula alba purpurea, wholly purple.
Castanea sativa aureo-marginata, the variegated Sweet Chestnut, perhaps the best of all large trees, with parti-coloured leaves.
Catalpa bignonioides aurea, wholly golden, and most effective in summer and autumn.
Fagus sylvatica purpurea. Of the Purple Beeches there are now numerous forms, such as atropurpurea, cuprea, purpurea, pendula (weeping), and "Swat Magret" (the darkest of all).
„ sylvatica variegata, white.
„ sylvatica tricolor, various shades of red and purple; beautifully coloured, but not vigorous.
„ sylvatica var. Zlatia, entirely pale golden green in spring, but for a short time only.
Fraxinus americana aucubæfolia, richly mottled with yellow.
Ilex Aquifolium. The variegated Hollies, both silver and

golden, are now very numerous; among the best are argentea marginata, argentea pendula, Golden Queen, Silver Queen, Golden King, flavescens, latifolia aureo-marginata, maderensis variegata, Watereriana, aureo-medio picta, aureo-pendula, handsworthensis.

Laburnum vulgare foliis aureis, all yellow.

Platanus acerifolia Süttneri, very pure white with scarcely any green on late growth.

Populus deltoidea aurea, all yellow.

Prunus cerasifera atropurpurea (P. Pissardi), lovely claret red when young, becoming dull purple in summer.

Pyrus Malus neidwetzkyanus. In this Apple not only the leaves, but the wood and fruit are purplish red.

„ Aria chrysophylla, yellow.

Quercus Cerris variegata, the white variegated Turkey Oak.

„ pedunculata Concordia, a lovely clear yellow, but apt to burn.

„ pedunculata purpurea, wholly red purple.

„ rubra, crimson.

Robinia Pseudacacia aurea, yellow.

Ulmus campestris, "Louis Van Houtte," the best Golden Elm.

„ campestris viminalis variegata, a charming white-variegated, small-leaved Elm.

Conifers

Abies concolor violacea, glaucous blue.

Cedrus atlantica glauca, glaucous blue.

Cupressus lawsoniana; numerous varieties, of which gracilis pendula aurea, lutea (very hardy), Silver Queen, and albo-variegata may be mentioned.

„ nootkatensis lutea, yellow-tipped twigs.

„ obtusa aurea, yellow.

„ obtusa nana aurea, dwarf yellow.

„ pisifera plumosa aurea, yellow.

„ macrocarpa lutea, the best yellow Conifer in mild districts.

ELÆAGNUS PUNGENS (*Kew*).

CORNUS MAS VAR. VARIEGATA (*Variegated Cornel*).

Juniperus chinensis aurea, gold-tipped.
Picea orientalis argenteo-spica, young shoots pale yellow.
„ pungens glauca, the best "blue" Conifer.
Pinus sylvestris aurea, golden in winter, green in spring and summer.
Taxus baccata aurea, "Golden Yew"; a Barronii.
„ baccata fastigiata aurea, "Golden Irish Yew."
„ baccata semper-aurea, golden more or less throughout the winter.
Thuya (Biota) orientalis aurea, yellow in summer.

Shrubs or Small Trees

Acer palmatum atropurpureum, purple. There are many forms of this Japanese Maple—cut-leaved, purple, and golden—but this is the hardiest.
Aralia chinensis albo-variegata. This is one of the most promising new variegated shrubs. It is sold as Dimorphanthus mandschuricus var. variegatus.
Atriplex Halimus, silvery grey entirely.
Aucuba japonica, many forms, yellow or creamy white.
Berberis vulgaris foliis purpureis, one of the best purple shrubs.
Buxus sempervirens aurea, "Golden Box."
Corylus maxima atropurpurea, a dark-purple, very effective variety of the Cob-nut.
Cornus Mas aurea elegantissima, yellow.
„ Mas variegata, white.
Elæagnus pungens aurea, one of the most beautiful variegated evergreens.
„ pungens variegata, white.
Euonymus japonicus albo-marginatus, very good for the south coast.
„ japonicus ovatus aureus, same as preceding, but yellow.
Ligustrum (Privet) ovalifolium foliis aureis, the best variegated shrub for hedges and for rough usage.
Neillia opulifolia lutea, yellow in spring only.

Philadelphus coronarius foliis aureis, yellow in the spring and early summer and very bright then, gradually gets green afterwards.

Ptelea trifoliata aurea, yellow.

Rhamnus Alaternus variegatus, white.

Rhus Cotinus atropurpureus, purple.

Symphoricarpus orbiculatus variegatus, yellow.

Sambucus nigra foliis aureis, yellow, retaining its colour well till autumn.

„ racemosa plumosa aurea, a beautiful cut-leaved Golden Elder.

Dwarf Shrubs and Climbers

Acanthopanax spinosum variegatum, pretty, white-variegated, dwarf, and slow-growing.,

Arundinaria auricoma, the best yellow-variegated hardy Bamboo.

„ Fortunei, the best white-variegated hardy Bamboo.

Cornus alba Spaethii, probably the finest of all yellow-variegated dwarf shrubs, never "scorching" in the hottest summers.

Euonymus radicans, the white-variegated form of this plant is useful as a carpet in shady positions where grass will not grow.

Hedera Helix (Ivy), numerous varieties, both shrubby and climbing—arborescens variegata, chrysophylla, discolor, maderensis variegata, sulphurea, canariensis argentea.

Jasminum nudiflorum foliis aureis and

„ officinale foliis aureis, variegated climbers with yellow leaves; the latter is the more ornamental, but is delicate in constitution.

Kerria japonica foliis variegatis, white.

Lonicera japonica aureo-reticulata. The veins of this climber are beautifully "picked out" in gold.

Osmanthus Aquifolium ilicifolius variegatus, a holly-like, white-variegated shrub useful in the milder parts of the kingdom.

Osmanthus Aquifolium purpureus, the hardiest of the Osmanthus.
Pieris japonica variegata, white.
Ribes alpinum pumilum aureum, golden in spring.
Rubus ulmifolius variegatus, veins of the later leaves golden.
Salix repens argentea, a prostate silvery-leaved Willow, makes a pretty weeping shrub if trained up at first.
Santolina Chamæcyparissus, silvery white entirely.
Vitis heterophylla variegata, a pretty, blue-berried climber, but tender; the variegation is rosy white.
„ inconstans purpurea, a purplish form of the popular "Ampelopsis Veitchii."
„ vinifera purpurea, deep purple.
Vinca minor, white and yellow-marked forms.

TREES AND SHRUBS FOR SEA-COAST

In planting trees and shrubs near the sea, two important matters must be considered—(1) fierce gales; (2) salt spray. As a protection against storms much may be done by planting quick-growing things, such as Poplars and Willows, and in this sheltered area more permanent trees and shrubs may be put. This way of planting for shelter where bleak places are to be clothed with trees and shrubs is universally adopted in some form or other, sometimes in the shape of hedges or belts, and in the other cases the plants are all placed much thicker together than they are to permanently remain, thus forming a compact mass against which the wind makes little or no impression. In this last-named case continual thinning will be necessary as they grow up, for if left too long the plants become weak, and the advantage gained by the thicker planting is then completely lost. A beautiful seaside shrub, and the best, too, for forming shelter hedges of low or medium height is the Tamarisk, which retains its freshness throughout the season till the autumn, however much exposed to the sea.

It is difficult to make a list of trees and shrubs suitable for seaside planting around the British Isles, as the coast-line is so varied, and the action

of the Gulf Stream has great influence on the vegetation of many parts of our western coasts. As no hard and fast line can be drawn, the first list contains those trees and shrubs that may be regarded as thoroughly hardy, unless otherwise specified, and the second list those that are available for planting in the Isle of Wight, in the south and west of England, and in some parts of Ireland.

TREES

Acer platanoides (Norway Maple).
,, Pseudo-platanus (Sycamore).
Alnus (Alder) of sorts. Will thrive only in damp places.
Ash, Mountain.
Betula alba (Birch) and varieties.
Carpinus Betulus (Hornbeam).
Cerasus (Cherry), particularly C. Avium and C. Mahaleb.
Cratægus (Thorn) of sorts.
Cupressus macrocarpa (Monterey Cypress). Of rapid growth.
Fagus sylvatica (Beech) and varieties.
Fraxinus excelsior (Common Ash). F. Ornus (Flowering Ash).
Ilex Aquifolium (Holly) and varieties.
Laburnum.
Pinus austriaca (Austrian Pine). One of the best Firs for bleak seaside places.
,, contorta (Twisted Pine). A small tree.
,, insignis (Grass-green Pine). More tender than the others.
,, Laricio (Corsican Pine). Equal to the Austrian Pine for seaside.
,, muricata (Prickly-coned Pine). A dwarf tree.
,, Pinaster (Cluster Pine). Delights in the neighbourhood of the sea.
,, montana (Mountain Pine). A shrub or small tree.

Populus alba (Abele or White Poplar). All the Poplars grow quickly.
„ deltoidea (Canadian Poplar).
„ fastigiata (Lombardy Poplar).
„ nigra (Black Poplar).
Prunus cerasifera (Cherry Plum).
„ Padus (Bird Cherry).
„ Pissardi (Purple-leaved Plum).
Pyrus Aria (White Beam tree).
„ Aucuparia (Mountain Ash).
„ prunifolia (Siberian Crab).
„ Sorbus (Service tree).
Quercus Cerris (Turkey Oak). Good loam suits this best.
„ Ilex (Evergreen or Holm Oak).
Salix (Willow) of sorts. Prefer a moist soil.
Ulmus (Elm) of sorts, particularly Wych Elm.

Shrubs

Atriplex Halimus (Sea Purslane). Will grow close to the water.
Aucuba japonica (Aucuba). Few evergreens equal this.
Berberis (Barberry), Aquifolium, Darwinii, dulcis, and stenophylla.
Buxus (Box) and its varieties.
Cerasus Laurocerasus (Common Laurel) and C. lusitanica (Portugal Laurel).
Cistus Gum. Does well at Felixstowe, Suffolk.
Colutea arborescens (Bladder Senna). Will grow in very sandy soil.
Corylus Avellana (Hazel) and varieties.
Cotoneaster of sorts. All these are good for the purpose.
Cytisus (Broom) of sorts.
Daphne Laureola (Spurge Laurel). Will grow in shade.
Deutzia crenata, D. crenata flore-pleno, D. gracilis, D. Lemoinei.
Elæagnus of sorts. All of these are good.

TAURIAN TAMARISK (*Tamarix tetrandra*), *IN FLOWER.*

Euonymus europæus and E. latifolius (Spindle trees), and the evergreen E. japonicus and its varieties. This last is one of the most valuable evergreens, but it is rather tender.

Ficus Carica (Common Fig).

Forsythia suspensa. A charming rambling shrub.

Halimodendron argenteum (Siberian Salt tree).

Hippophæ rhamnoides (Sea Buckthorn). The finest seaside shrub or small tree that we have; grows well in damp sands.

Leycesteria formosa.

Ligustrum (Privet) of sorts.

Lycium barbarum, L. europæum (Box Thorn).

Olearia Haastii (Daisy bush).

Osmanthus ilicifolius and varieties.

Philadelphus (Mock Orange) of sorts.

Phillyræa angustifolia, latifolia, media, and vilmoriniana.

Prunus spinosa flore-pleno (Double-flowered Sloe).

Pyrus japonica (Japan Quince).

Ribes aureum (Golden-flowered Currant).

„ sanguineum (Flowering Currant) and varieties.

Rosa. The different wild Roses and Rosa rugosa.

Rubus (Bramble). The double-flowered and cut-leaved forms are very ornamental.

Salix (Willow) of sorts. All prefer moist soil.

Sambucus (Elder) of sorts.

Skimmia japonica. Valuable for its bright-red berries.

Spartium junceum (Spanish Broom). Will grow almost anywhere.

Spiræa of sorts. There is a great variety of these beautiful flowering shrubs.

Symphoricarpus racemosus (Snowberry).

Syringa (Lilac) of sorts.

Tamarix gallica and T. tetrandra. Delightful shrubs for seaside.

Ulex europæus (Furze or Gorse), with the double-flowered and dwarf kinds.

Viburnum Opulus and V. Opulus sterile (Snowball tree).
Weigelas of sorts, particularly Abel Carriere, candida, and Eva Rathke.

For the west of England and other very mild districts the following may be added:—

Arbutus Unedo (Strawberry tree).
Aralia Sieboldii.
Azara microphylla.
Benthamia fragifera.
Buddleia globosa.
Ceanothus of sorts.
Choisya ternata.
Desfontainea spinosa.
Escallonias of sorts.
Fabiana imbricata.
Fuchsias, hardy kinds.
Garrya elliptica.
Griselinia littoralis.
Grevillea rosmarinifolia, G. sulphurea.
Hydrangea Hortensia.
Laurus nobilis (Sweet Bay).
Myrtus communis (Myrtle).
Pittosporum crassifolium.
Rhamnus Alaternus and varieties.
Veronicas of sorts.
Viburnum Tinus (Laurustinus).

TREES AND SHRUBS FOR WIND-SWEPT GARDENS

FEW trees and shrubs are happy in bleak and exposed gardens. The hardiest should be used to form a shelter belt, as every leaf and twig helps to break the force of the wind, whereas solid obstacles, such as walls, merely serve to divert its course. In planting spots much exposed to the wind, put the trees much closer than it is intended they should remain permanently, as the young plants serve to shelter one another, and encourage, therefore, a quicker growth. When they get crowded, gradually thin them out. The trees and shrubs should always come from exposed nurseries, as the growth is stout and sturdy. Growth made in warm valleys is more sappy. The following trees and shrubs can be depended upon in most windy places:—

TREES

Acer platanoides (Norway Maple) and Acer Pseudo-platanus (Sycamore). While not equal to some of the trees mentioned, these Maples do well in many places and form a distinct feature.

Betula alba (Common Birch). An extremely graceful tree and a universal favourite.

Cratægus Oxyacantha (Hawthorn). The principal effect of

exposure is to make the growth more stunted than would otherwise be the case.

Fagus sylvatica (Beech). Long recognised as a good shelter tree, its value in this respect is increased by the fact that many leaves often shrivel on the branches instead of dropping, thus giving additional protection in winter.

Fraxinus excelsior (Ash). The wide-spreading roots of this anchor it securely in position, and the leaves do not weigh down the branches to any great extent.

Ilex Aquifolium (Holly). Though of slow growth when young, this, when once established, grows away freely and is indifferent to wind.

Larix europæa (Larch). This is well known as a nurse tree for bleak places.

Picea (Abies) excelsa (Norway Spruce). One of our commonest Conifers, hence it is often used as a nurse tree for choicer subjects.

Pinus austriaca (Austrian Fir). The best of all evergreens for bleak places; Pinus Cembra (Swiss Stone Pine), of slow growth, but very ornamental, and does not mind the wind.

Pinus Laricio (Corsican Pine, or Black Pine). As indifferent to exposure as P. austriaca, P. montana (dwarf), and P. sylvestris (Scotch Fir), a well-known native, which often crowns high hill-tops.

Populus alba (Abele), P. fastigiata (Lombardy Poplar), P. deltoidea (Canadian Poplar), P. nigra (Black Poplar), and P. tremula (Aspen). In low-lying districts all these Poplars are of rapid growth, but in exposed places they make much slower progress. Even then they grow quicker than most shelter plants, and are valuable for making an effective display more quickly than some of the more permanent subjects. These can all be readily cut back within reasonable limits if desired.

Quercus Robur (Oak).

Robinia Pseudacacia. The false Acacia is one of the best

ASHES.

THE LOMBARDY POPLAR.

town trees we have; indeed, it does well almost everywhere.

Salix alba (White Willow). This will pass unscathed through fierce storms. In fairly dry spots the rate of progress is much slower than in moister soil, but, as a set-off, the silvery hue of the foliage is more pronounced.

Ulmus (Elm). The best of the Elms for this purpose is the Wych Elm.

SHRUBS

Atriplex Halimus (Sea Purslane). A silvery-leaved, free-growing shrub, indifferent to soil or situation.

Berberis (the Barberry). The best of these are the strong-growing Berberis aristata, and the common Berberis vulgaris, with its several varieties.

Cerasus Laurocerasus rotundifolia. One of the hardiest forms of our Common Laurel.

Colutea arborescens (Bladder Senna). The golden flowers in early summer and the large inflated seed-pods in autumn are both attractive.

Cotoneaster buxifolia, Nummularia, and Simonsii. These are all pretty berry-bearing shrubs.

Cytisus albus (White Broom), Cytisus scoparius (Yellow Broom), and its varieties.

Deutzia crenata flore-pleno. A handsome flowering shrub and the most robust of its class.

Euonymus europæus (Spindle tree). The fruits of this are very ornamental in the autumn.

Halimodendron argenteum (Siberian Salt Bush). A pretty rambling shrub, with silvery leaves.

Juniperus communis and J. Sabina (Savin). The fact that these Junipers are evergreen is a point in their favour.

Ligustrum ovalifolium, ovalifolium elegantissimum, and vulgare. These Privets are well known for planting where the conditions are none too favourable.

Lycium europæum (Box Thorn). A rambling shrub holding its own almost anywhere.

Osmanthus of sorts. Holly-like evergreen shrubs.

Philadelphus coronarius (Mock Orange). Though less showy than some others, this is decidedly the hardiest.

Phillyræa vilmoriniana. A valuable evergreen with deep-green, leathery leaves.

Pinus (Mountain Pine). This member of the Fir family is but a shrub in stature. It is at home in bleak spots.

Potentilla fruticosa (Shrubby Cinquefoil). A low shrub that produces its golden blossoms in July and August.

Rosa canina (Dog Rose) and Rosa rubiginosa (Sweetbriar) are general favourites.

Rubus (Bramble). The cut-leaved, the double white, and double pink are ornamental.

Spartium junceum (Spanish Broom). However bleak, this will produce its comparatively large pea-shaped blossoms throughout the summer.

Staphylea pinnata (Bladder Nut). The bladder-like seed-capsules are striking in the autumn.

Symphoricarpus racemosus (Snowberry). Grows anywhere, and produces its large white berries in great profusion.

Viburnum Opulus (Guelder Rose). A pretty native shrub.

Ulex europæa (Common Furze). The double form of this is remarkably showy.

CORSICAN PINE TREE WALK, 35 YEARS OLD.

THE FAMOUS ARAUCARIA IMBRICATA AVENUE AT MURTHLY, N.B.

CONIFERS (INCLUDING PINES) IN ORNAMENTAL PLANTING.

THOSE who take a serious interest in their gardens and other planted grounds are so rapidly acquiring a better comprehension of the art in its wider aspects, and are so willingly receptive of further suggestion, that we emphasise a lesson that we have often tried to teach, namely, the importance of planting in large groups of one thing at a time, and of a right choice.

There is no more common mistake made than that of planting just the wrong things in the wrong places. Thus we see plantations of Spruce on dry, sandy hill-tops, from whence the poor trees must look with longing eyes to their true home in the moist, alluvial soil of the valley-bottom below. In mixed plantations we see Conifers from many climes and all altitudes, all expected to do equally well in perhaps one small space of garden ground. If in a projected plantation there is space for only fifty trees, how much better it would be first to ascertain which out of a few kinds would be best suited to the soil and general conditions of the place, and then out of this selection to choose the one that best fits the planter's own liking and will be most in harmony with the further planting scheme that he has in view. In this way he will obtain that unity of effect that alone can

make a garden or piece of planted ground pictorial and restful, and enable to serve as a becoming setting to the brightly-coloured flowering plants that will then show their proper value as jewels of the garden.

In this restrained and sober use of trees, and especially of Conifers, it is well to plant them of several ages, the youngest to the outer edges of the groups. If there is plenty of space it will be all the better to plant the trees in hundreds rather than in fifties, or in any case in spaces large enough to see one whole picture of one good tree at a time. Where such a planting was wisely made from forty to sixty years ago how fine the effect is to-day, as in the case of the grand growth of Douglas Firs at Murthly. No one seeing so fine an example of the use of one tree at a time could wish that the plantation had been mixed, or could be otherwise than deeply impressed with the desirability of the plan.

One such large group can always be made to merge into another by intergrouping at the edges, beginning by an isolated tree of group B in the further portion of group A, then a group of two or three of B, until the process is reversed and the group is all of B, with single ones of A giving place to all B. There is no reason why the same principle should not be used with two or three kinds of combined grouping, but then it should be of trees harmonious among themselves, as of Spruce and Silver Fir, or of such things as represent the natural mixture of indigenous growth. Thus the Yew, Box, Viburnum, Dogwood, Privet, and Thorn of a wild

MAIDENHAIR TREE (Ginkgo biloba, syn. Salisburia adiantifolia); FROGMORE.

MAIDENHAIR TREE AT KEW.

chalky waste might be taken as a guide to planting some of these with nearly allied foreign kinds. But the important thing in all such planting is to have the satisfactory restfulness and beauty of harmony that can only be obtained by the right and limited choice of material.

Although a few Conifers are deciduous, such as the Maidenhair tree (*Ginkgo biloba*), *Taxodium distichum*, the Golden Larch (*Pseudolarix Kæmpferi*), and the true Larches, the great bulk of the family consists of evergreens. It is to the Coniferæ, indeed, that belong the only hardy evergreen trees which in stature and size rival the large deciduous trees of cool temperate latitudes. Although our only native Conifers are the Yew, the Scotch Pine, and the Juniper, there is a sufficient variety of soil and climate within the limits of the British Isles to provide suitable conditions for nearly the whole of the family. It is only a few subtropical species that cannot be accommodated. This does not imply that the whole of the hardy Conifers can be grown satisfactorily in any one place. In even the best Conifer localities there are some species that will not reach perfection, and in the general run of gardens there is a considerable proportion of species about which the same must be said. This fact, however, has often been overlooked.

The extreme popularity of Conifers, which was at its height from forty to fifty years ago, undoubtedly led to the enriching of the parks and gardens of this country with what are now, in many instances,

magnificent specimens. To realise how great that enrichment was, one has only to mention such places as Dropmore, Murthly Castle, Ochtertyre. But Conifer planting, from both artistic and merely cultural points of view, was overdone. Conifers began to fill an undue proportion of space in gardens, and displaced to a large extent the beautiful flower-bearing deciduous vegetation whose seasonable variations give such charm and interest. With all their symmetry and richness of hue, the popular species of Abies and Picea often have a heavy, even sombre, aspect. Heavy masses of Pine, Spruce, and Fir can never give that changing aspect in the landscape that comes with deciduous vegetation. The tender tints of spring, the flowers, the gold and purple of autumn, it is to these that the seasons of our northern latitudes owe their greatest delights.

Perhaps the worst of all the uses to which Conifers have been put is that of forming long avenues across parks. It is difficult to understand the frame of mind that would prefer rows of *Araucaria*, *Abies nobilis*, or other similar things—however well grown and pyramidal they might be—to a noble vista of Chestnut, Oak, or Lime, with its canopy of branch and foliage overhead. Conifers can, however, be used effectively for forming short avenues within the garden itself, especially in the more trimly-kept parts.

The practice that is frequently adopted of forming a pinetum and bringing together the members of this family in one part of the grounds is a very good

one. It is far better than sprinkling them indiscriminately over the whole garden. At the same time, where sufficient space is not available for the formation of a pinetum they may be used in their proper proportion with other evergreens in various parts of the garden. Single specimens on lawns of Abies, Picea, and of many other genera are always effective, and nothing in the whole range of native or foreign trees is more stately and picturesque than the Cedar of Lebanon. How much do we of the present day owe to those who a century or more ago planted this tree so abundantly in this country!

Before planting Conifers largely in any garden where they are to be grown for their purely ornamental qualities, a study should be made of the species planted in other gardens where the conditions as to soil, moisture, and altitude are similar. On the peaty formations in Surrey and Hampshire where Rhododendrons succeed so well, many Conifers thrive exceedingly well also. The Common Spruce and its allies are nearly all failures on light dry soil, especially where the subsoil is gravel. In places, however, where the Spruces fail, the Common Larch and the Lawson Cypress succeed well. In chalk districts many Conifers refuse to grow, but the following are among those that thrive: *Abies magnifica*, *A. nobilis*, *A. nordmanniana*, and *A. Pinsapo*, the Cedars, *Cupressus lawsoniana*, *C. macrocarpa*, and *C. nootkatensis*, the Maidenhair tree, the Junipers, the Thuyas, the Yews, and the following Pines: *Pinus Laricio* and *P. austriaca*, the Scotch

Pine, *P. excelsa*, and *P. Pinaster*. Most of the Pines, too, are happy on gravelly or stony ground.

None of the Silver Firs (*Abies*) or Spruces (*Picea*) are good trees for planting at the seaside, unless there is sufficient shelter to break the force of the wind, and even then there are very few that will succeed. The species most suitable for planting where there is a thick outer belt are *Abies nobilis*, *A. lasiocarpa*, *A. nordmanniana*, and *A. pectinata*, the Common Silver Fir. Of the Spruces, *Picea nigra* and *P. alba*, the North American Spruces, succeed better than the Norway Spruce, *P. excelsa*, but these, like the Silver Firs, must have the shelter of a good wind break; *Picea parryana*, *P. pungens*, and *P. Engelmanni* will not succeed in exposed places, even in inland localities, and fail entirely by the sea. The Conifers that will thrive by the sea are very few, and probably not more than half-a-dozen kinds can be trusted. The finest of all is undoubtedly *Pinus Pinaster*, which is essentially a sea-coast Pine, revelling in storms and sprays. *P. maritima*, closely allied, is equally suitable. Then, for warmer parts, is the Aleppo Pine (*P. halepensis*), but is only for southern and warm coasts. *P. insignis* is somewhat hardier, and stands the sea gales fairly well, and *P. austriaca*, and its relative, *P. Laricio*, are both excellent, specially for making the first barrier against the winds. The hardy Scotch Pine (*P. sylvestris*), if planted in large masses grows well, but does not luxuriate close to the sea, and is especially liable to be browned in foliage by the salt spray.

VARIETY TENUIFOLIA OF CORSICAN PINE (Pinus Laricio).

Besides the Pines the finest of all Conifers is the Monterey Cypress (*Cupressus macrocarpa*), which one sees hardy everywhere on the coast in these islands; it grows finer than it does in its home on the Pacific coast. It makes a fine front barrier against the wind, especially when mixed with the foregoing Pines. The variety *C. lambertiana* is also excellent. There are two other Conifers which, though not much planted by the sea-coast, will, we believe, prove reliable; these are *Cedrus atlantica* and *Thuja gigantea* (sometimes called *T. Lobbii*). A third Conifer that we have seen doing well by the sea is *Abies Pinsapo*, but it must have a temporary shelter in its small state. This subject of seaside planting—the most difficult in a tree planter's practice—is an important one, and it is only possible to treat the matter generally.

The Conifer family is especially noteworthy for the way many of its species vary. Not only is this propensity evidenced in such characters as the colour of the leaf and the differences in habit; it shows itself more remarkably sometimes in the form and texture of the leaf and mode of branching. So great is the difference between some forms of certain species of Conifers that they have been placed in different genera. What are generally known as Retinosporas, for instance, are really nothing more than forms, "states" the botanists term them, assumed by various species of Thuya and Cupressus. Strictly speaking, *Retinospora* has no separate existence as a genus. This, however,

is a botanical phase of the matter. Horticulturally we are more concerned with such variations as adapt the plants to various garden purposes. Many quaint and dainty forms of large trees are very suitable for the rock-garden in association with other alpine plants. The Common Spruce, for instance, has given birth to many pigmy forms. The Yew, the Scotch Pine, and various others have "sported" in a similar way. But no hardy tree varies so much, perhaps, as the Lawson Cypress when raised from seed. The species has assumed almost every shade of colour that Conifers do assume, and every form of growth. Beautiful golden, variegated, pendulous, and erect varieties have been raised, and not only from the Lawson Cypress, but from many other Conifers also. The Golden Yews, the yellow form of the Monterey Cypress, and the golden variety of the Scotch Pine, may be recommended to those who require this colour, although in the Pine it only shows itself in winter. The blue-white or glaucous hue that is more or less present in most Conifers, shows itself most conspicuously in the Blue Spruce (*Picea pungens glauca*), in *Cedrus atlantica glauca*, in the new Cork Fir from Arizona (*Abies lasiocarpa var. arizonica*), and in *Abies concolor violacea*.

The Propagation of Conifers

Many mistakes have been made in propagating the Coniferæ, and to make matters still worse, the old erroneous doctrines are still preached and practised. The unpopularity of certain species of

AVENUE OF ABIES NOBILIS GLAUCA AT MADRESFIELD COURT.
(*The avenue is quarter-mile long, planted in* 1868*; average height of trees* 60 *feet and* 45 *feet apart.*)

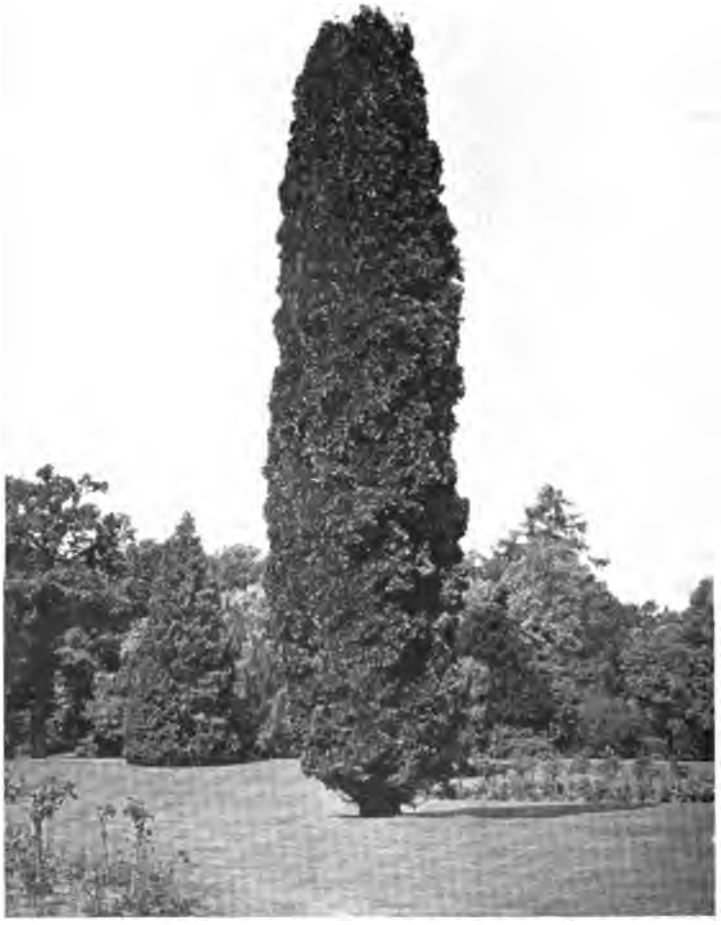
CEDRUS ATLANTICA GLAUCA AVENUE AT MADRESFIELD COURT.
(Avenue is about quarter-mile long, planted in 1865. All seedling trees, hence some difference in growth and colour.)

Abies, Picea, and Pinus is due to a great extent to the practice of grafting them on unsuitable stocks. For instance, the species of Abies are worked on *A. pectinata*, of Picea on *P. excelsa*, and of Pinus on *P. sylvestris* or *P. Laricio*. In addition to this, such methods and stocks are still spoken of as the correct ones to use; though, to take one genus alone, what kind of a specimen *Abies bracteata*, *A. nobilis*, or *A. concolor* would make in twenty year's time if worked on *A. pectinata* we should not like to say—certainly very poor, even if they lived, which is doubtful. It may be laid down as a law that *species* of Coniferæ should never be grafted but raised from seed, which can always be obtained through English firms. With varietal forms of Coniferæ that will not come true from seed or that cannot be struck as cuttings, grafting must be resorted to, and if young plants of the type species are used as stocks the results will be fairly satisfactory. In the case of some of the more highly variegated Cupressus, &c., grafting is really the best method of propagation, as these forms are mostly of weak constitution and are not satisfactory from cuttings. In the following list the best methods of propagation are given with each genus, together with special mention of those forms which are of indifferent growth though not difficult to propagate:—

JUNIPERUS.—The Junipers should be raised from seeds, though some of them do fairly well if propagated by cuttings. The green and glaucous varieties of *J. chinensis*, *J. excelsa*, *J. virginiana*, and *J. communis*

root easily from cuttings, or can be layered with success. The variegated forms are best grafted on stocks of the species they belong to, and *J. Sabina* (the Savin) and its varieties are easily raised from cuttings or layers, the latter being a very easy way of propagating them.

CUPRESSUS.—This genus is divided into two sections, viz., the true Cypresses, represented by *C. macrocarpa*, *C. sempervirens*, &c., and Chamæcyparis, of which *Cupressus lawsoniana* is the best known species. With the former section seeds are the best means of reproducing the species, while the few varieties should be grafted on stocks of the parent species. The handsome *C. macrocarpa var. lutea* especially should be worked on the type, as it is practically a failure from cuttings, and if grafted on *C. lawsoniana*, as is sometimes done, it makes a short, stumpy bush instead of a typically tall columnar tree. In the Chamæcyparis section *Cupressus lawsoniana*, *C. nootkatensis*, *C. obtusa*, *C. pisifera*, and *C. thyoides* are the only species, though there are a host of varieties attached to them, the forms of the three latter species, in fact, including all the various plants more commonly known under the generic title of Retinospora. The species should be raised from seed, which is easily obtainable and germinates readily, or in default they will root from cuttings. The varieties, with a few exceptions, are quickly propagated by cuttings, those that require to be grafted being *C. lawsoniana var. lutea*, the variegated forms of *C. nootkatensis*, and *C. obtusa*



LIBOCEDRUS DECURRENS AT FROGMORE (*about* 65 *feet high*).

vars. nana, nana aurea, and *filifera aurea.* The forms of *C. thyoides* also do well when raised from layers.

THUYA.—These are propagated in much the same way as the Cupressus, viz., the species by seeds, and the varieties by cuttings or by grafting in the case of the one or two highly variegated forms. Some of the green or glaucous varieties of both Cupressus and Thuya will come fairly true from seed, from 40 per cent. to 70 per cent. being the usual quantity of seedlings true to name. Variegated forms from seed either come green or a mongrel mixture of green and variegated.

LIBOCEDRUS.—This should be raised from seed, as when grafted on *Thuja orientalis*—a too common method of propagation—it makes a miserable specimen. The middle pair of scales in the cone of Libocedrus alone contain fertile seeds.

SCIADOPITYS and TAXODIUM.—These can only be propagated by seeds, and the young plants should have a fairly moist position with plenty of leaf-mould or peat to grow in afterwards.

SEQUOIA.—The two species of Sequoia should be raised from seed, and the three or four varieties be grafted on the type species.

CRYPTOMERIA.—This only contains one species, viz., *C. japonica,* which can only be obtained from seed, or by cuttings; and the varieties root readily as cuttings, though one or two of the weaklier ones do better if grafted on *C. japonica.*

ARAUCARIA.—Propagate by seeds, which, though

sometimes difficult to obtain, germinate freely and quickly.

TSUGA.—The Hemlock Spruces are easily and quickly obtained from seeds, and one or two will strike from cuttings; the varieties do best when grafted on the species they belong to, though *T. pattoniana var. glauca*, more commonly known as *Abies hookeriana*, will come fairly true from seed, about 75 per cent. being the usual quantity if the seed is obtained from good plants.

PICEA.—This genus has been mentioned before as being commonly grafted on *P. excelsa* (the Common Spruce), which is an easy way of obtaining young plants, which, however, cannot be recommended to form good specimens in after years. The species of Picea should all be raised from seed, and the many named varieties of *P. excelsa* should be grafted on the parent species. At least one-half the plants of *P. Engelmanni var. glauca* and *P. pungens var. glauca* (the Californian Blue Spruce) will be found true to name when raised from seeds, while their superiority afterwards over grafted plants is evident.

CEDRUS, LARIX, AND PSEUDOLARIX.—It should always be remembered that these three are quite distinct genera, and for purposes of propagation should never be used in conjunction with each other, the first being evergreen and the two latter deciduous. The species of all three should be raised from seed; the varieties of Cedrus should be grafted on that genus, the forms of Larix on the Larch, though the geographical forms of the Common

Larch, such as *var. rossica* and *var. sibirica*, usually come true from seed. *Pseudolarix Kæmpferi*, the only representative of the genus, must be raised from seed, as if grafted on the Larch they will not thrive for long.

ABIES.—In this genus some of the most handsome Conifers are found, and also some of the most difficult to grow. All the Abies should be propagated by seeds, but if seed of the varieties cannot be obtained then they must be grafted on the parent species.

PSEUDOTSUGA.—This genus only contains one species, viz., *P. Douglasii* (the Douglas Fir), which is propagated readily by seed, the seedlings being of rapid growth and soon form good plants. The few varieties are grafted on the type, though the majority will come fairly true from seed, which, however, is not always to be obtained.

PINUS.—Perhaps no Conifer adds so much to the beauty of the landscape in winter as the Pine. All the species should be raised from seeds, and any green or glaucous varieties can also be propagated in the same way if seeds can be obtained. The golden, dwarf, and variegated Pines must be grafted on the species they are varieties of.

TAXACEÆ is usually associated with Coniferæ, from which it differs chiefly by the seed being nearly or quite enclosed in a fleshy envelope instead of in a cone, the fruit of some resembling a small Plum, but a typical fruit is seen in that of the Common Yew. The hardy genera are *Ginkgo*

biloba (the Maidenhair tree), which is propagated from seed—the plant is deciduous and slow growing; Cephalotaxus and Torreya are propagated by seeds, cuttings, or layers.

TAXUS (the Yew).—There are only three or four species of Taxus, but there are a great many varieties of the Common Yew, many being very handsome. The species are easily raised from seeds, layers, or cuttings. The first two methods are the best, cuttings being very slow in growth, but as seed is very plentiful in most years this is the quickest and best means of propagation. Some of the varieties will come true from seed; the Irish Yew, however, must be struck from cuttings, as seedlings never come true. The more highly variegated Yews grow quickest when grafted on the Common Yew, and as they always keep good in after years this method can for once be recommended.

Propagate PRUMNOPITYS and SAXEGOTHEA by seeds, cuttings, or layers.

CONIFERS AT MURTHLY CASTLE, PERTHSHIRE

The following account of a great Conifer garden in Scotland is important, as showing how certain of the better-known species have behaved during the last fifty years or so. It is taken from the *Garden* of May 19, 1900:—

The second quarter of the present century saw the introduction of a large number of Conifers hitherto unknown to English gardens. Their cultivation was eagerly taken up, and especially in Scot-

AVENUE OF ANCIENT YEWS AT MURTHLY.

land, a land whose general conditions seem highly favourable to a considerable number of species, much success has been attained. It may still be premature to state with any degree of assurance what may be the ultimate suitability of many of these Conifers for growth in our islands. The lifetime of a tree is not comprised within its first sixty years, and such a length of time is all too short to prove the ultimate success of any new tree, though within that space it may come to a magnificent size and apparent promise. Such a state is shown by the splendid Douglas Firs in the grounds of Murthly Castle, Perthshire, where also many another exotic Conifer is grown in quantity.

These words of Sir William Thiselton-Dyer, that formed part of his opening address on the second day of the Conifer conference of the Royal Horticultural Society in 1891, may here be quoted:—

"Any one who had not travelled in Scotland could form no idea of the extent to which rare Conifers were cultivated in that country, and the splendid development which they attained. The chairman, by way of illustrating these remarks, directed the attention of the audience to some large photographs representing specimens of Coniferæ to be seen at Murthly Castle, Perthshire, where they flourished, and where stately and magnificent examples 70 feet, 80 feet, and 100 feet high were to be met with. Such trees could only be seen in Scotland, and were the result of a peculiar association of physical conditions. In the south-west of England it was impos-

sible to find a parallel, though even on the sunburnt soil of Kew good specimens of the Pines proper were occasionally to be seen. With regard to the Abies, however — that section of Conifers of which the Spruces may be taken as a type—a state of things prevailed in Scotland which could not be rivalled in England. On the other hand, the climate in the south-west of the latter country was fairly suitable for some other Conifers, and many of the fine Mexican Pines could be grown there."

Of the remarkable Douglas Fir at Dropmore, Mr. Charles Herrin on the same occasion says: "The monarch Douglas Fir, planted in 1830, has attained a height of 120 feet, girth of trunk 11 feet 9 inches, with beautiful spreading branches sweeping the ground, covering a diameter of 64 feet. The leaves are also of a glaucous hue, equalling in that respect many of the plants now sold from nurseries under the name of *Douglasi glauca*. . . . Many trees have since been raised from its seeds and planted out on the estate; one, planted in 1843, is now 78 feet high, with a girth of trunk of 8 feet 2 inches, spreading 39 feet in diameter at base; a perfect specimen."

By comparing the growth of the latter tree with the Murthly table, it will be seen that the trees make their growth much more rapidly in Scotland. The Murthly Conifers were all planted by Sir William and Sir Douglas Stewart. The present owner, Mr. Steuart Fothringham, who measured the trees in 1891 in anticipation of the visit of the Scottish

Arboricultural Society, on learning that we should be glad to know their increase of growth since that date, has been so good as to have the same trees measured again, the increase being shown by the subjoined table on p. 118.

Mr. Fothringham also furnishes the following remarks: "The measurements were all carefully taken by sending men or boys up the trees, not by dendrometers, and are, I believe, correct. There are something like eighty or a hundred different varieties growing at Murthly, but some of them are young and only experiments. Those measured and noted are the most striking; they are nearly all gowing in large numbers. The remarks appended to the table are made by Mr. James Laurie, the gardener, who knows Conifers well. The only additional notes I have made are the following: *Abies Menziesi* will never, in my opinion, supplant the Spruce. *Abies orientalis* is not as free-growing as the Spruce, but quite as hardy. *Araucaria imbricata.*—Many of these were damaged by severe frost. *Cedrus Deodara* will not, in my opinion, live to great age in our climate. *Cupressus thyoides.*—This particular tree was so much broken by branches blown off its neighbour that I cut it down. *Pinus monticola* has been attacked by a parasitic growth that is likely to destroy all the young growth and probably the trees. *Juniperus recurva* was severely injured by the hard frost. By the hard frost I mean the winter of 1894–5. In February 1895, the thermometer was for several days below o Fahr., and on one night

	August 11, 1892.			March 24, 1900.		
	Height.	Girth at 5 feet.	Spread of Branches.	Height.	Girth at 5 feet.	Spread of Branches.
Wellingtonia, planted 1857 (*a*)	66.6	9.3	26	74.11	10.7	28
Abies Menziesi, planted 1845 (*b*)	91.9	9.7	45	105.10	11.3	...
Pinus monticola, planted 1850 (*c*)	67	5.6	18	79.2	6.2	22
Araucaria imbricata, planted 1847 (*d*)	42.6	4	9	51	4.8	9.8
Abies Pinsapo, planted 1847	34.8	6.6	...	42.6	7.10	...
,, magnifica, planted 1867	31.9	2.7	9	43.3	3.8	11
,, Douglasi, planted 1847 (*e*)	86.6	8.10	24	97.4	9.10	27
,, grandis, planted 1852	64.2	4.8	22.6	79.10	6.10	35.8
,, albertiana, planted 1860	56	5.5	32	72.1	6.4	40
,, nobilis, planted 1847	75.4	6.1	...	92.8	6.6	...
,, nordmanniana, planted 1854	58.6	4	...	74	4.9	...
,, hookeriana, planted 1862 (*f*)	30	4	15	39.6	4	15.4
Cedrus Deodara, planted 1842 (*g*)	51.3	6.8	26	61.2	7.4	36
,, Libani (*h*)	65.10	11.8	...	67	12.5	...
Cryptomeria japonica, planted 1852	36.3	4.2	26	41.7	4.3	...
Libocedrus decurrens (*i*)	34.8	3.6	10	38	4.5	14
Thuja gigantea, planted 1862	46	3.6	21	57	3.7	...
Cupressus lawsoniana, planted 1859 (*j*)	...	...	...	48.7	4.2	...
Spanish Chestnut	...	...	...	...	17.10	...
,, ,, (*k*)	...	...	...	...	19.2	...
Silver Fir (*l*)	...	...	...	90	11.3	...
Cupressus lawsoniana erecta viridis	...	...	...	25	2.8	7
Abies ajanensis, planted 1885	...	...	...	24	1.7	10.6
,, brachyphylla, planted 1885 (*m*)	...	...	...	14	...	9.7
,, Veitchii, planted 1885 (*n*)	...	...	...	20.9	1.4	10.2
,, amabilis, planted 1885	...	...	...	14.11	...	9.5
,, concolor violacea, planted 1885	...	...	...	20.1	1.5	14.9
English Yew (*o*)	...	...	...	30	14.3	80
English Yew	...	...	...	...	10.8	...
Abies albertiana (at Roman Bridge) (*p*)	...	...	...	75	4.3	...
,, orientalis, planted 1852	30	2.7	...	49	3	...
,, smithiana, planted 1857	47	...	...	...	...	...
Pinus Jeffreyi	...	...	...	57	4.9	...

(*a*) At the ground this tree measures 16.9; cones freely. (*b*) There are six others about the same size, and all are growing freely. (*c*) Most of these have lately got a fungoid disease, viz., peridendrum. (*d*) Many of these lost branches, and some were killed by frost in 1894–5. They cone freely, and young ones are growing from seed. (*e*) A great many others about the same size, and all perfectly healthy. (*f*) A beautiful tree quite distinct from the others; long, drooping branches. (*g*) About sixty trees growing in the grounds averaging 50 cubic feet. (*h*) Age unknown, but probably not less than 150 years. (*i*) Probably thirty-five to forty years of age. (*j*) Two trees, recently taken out, measured 12 cubic feet and 14 cubic feet. (*k*) At ground this tree measures 29 feet. (*l*) Inclined to go back. (*m*) Will become a handsome tree. Coned last year. Some fertile. (*n*) Very apt to lose its leader either by birds or wind. Coned last year. (*o*) Very old; possibly 500 years. Many others of the same age and size. (*p*) Quite a different form from the others, the lower branches being quite table-form.

went to 11° below 0. This shows that all these trees will stand great cold at the time of year that it is likely to come, but late frosts in spring, when the sap has begun to rise, are detrimental to the young shoots of those that start their growth early in the season. There are at Murthly, besides Coniferæ, fine specimens of Yews, Oaks, Beech, Spanish Chestnut, Horse Chestnut, and Sycamore."

CARE OF OLD TREES

THE charm of many an estate is not the garden or the woodland, but the monarchs that for years have weathered the winter storm and stand out as noble specimens of their family. The trees may have some historic associations, but whether this is so or not, when they begin to decay efforts are made to save them from absolute death. Decay is harmful and objectionable in park and garden, and we are not sure that this matter of decay in trees has been so well considered as it might be, as bearing upon the health of other trees and of mankind also. A tree may be picturesque in decay, but we prefer it in health and beauty. Experts are frequently asked for remedies to arrest decay in old trees.

The two principal causes of decay are starvation at the root and injury by storms and disease. Such trees as the Beech and Horse Chestnut, that root close to the surface of the soil—quite different to the Oak—may often be invigorated by covering the ground with a few inches of good soil or short manure. Artificial watering, during prolonged drought, when thoroughly done, is also very helpful to the tree. Trees with large crowns of branches are frequently seen thinly furnished with foliage, and altogether sickly owing to unhealthy or insufficient

roots. The balance between top and bottom has been destroyed. To restore it in some degree the top-growth may be reduced by pruning out and shortening back branches here and there, wherever it can be done without spoiling the appearance of the tree. This demands careful judgment, but some old and sickly trees may certainly be restored in a measure by this help. It is of no value in the case of trees with decayed trunks, nor with those like our Common Oak, which will not break from old wood. But Elms, Robinias, and Red Oaks are among those that respond to this treatment.

Old trees with insecure branches can often be saved from destruction by fastening the main branches together on to the trunk. The common practice of putting an iron collar round the branch is a mistake. The iron prevents the branch expanding naturally and ultimately chokes it. A better way is to use a strong iron rod with a plate at the end, and instead of supporting the branch by encircling it, a hole is bored right through the centre of it, through which the rod is pushed from the outer side. In this way the weight is borne by the iron plate, which should, by removing sufficient bark, be allowed to fit close in to the wood. New bark will gradually close over and hide the plate, and instead of an ugly collar cutting into the wood, the only evidence of artificial aid is the rod coming from the inner side of the branch.

Branches or snags that have to be removed should be sawn off quite close to the trunk or larger branch

from which they spring. When a stump, even not more than a few inches long, is left, the new bark and wood are unable to close over it, and the wood ultimately decays and acts as a medium for moisture and fungoid diseases. A coating of liquid tar over the wound, renewed once or twice until the new bark has closed over, is a sure protection against these evils.

Trees decayed in the centre, with only an outer layer of healthy wood, are, of course, doomed, but by filling up all holes in the earlier stages of decay, and thus keeping out moisture, their term of life can be lengthened by many years.

Holes made by woodpeckers can sometimes be plugged up with a piece of Oak. This, if left on a level with the bark, will often enable the latter to close over the hole. Large holes may be filled with cement, or even built up with bricks, the surface being made water-tight and tarred over.

ALDERS NEAR WATER (*Catkin time*).

WHITE WILLOW (Salix alba) BY WATERSIDE.

TREES AND SHRUBS FOR WATERSIDE

MANY of the brightest garden pictures at the present day are by the well-planted pond or lakeside, where shrubs of large growth are grouped to give colour through summer and winter.

The wild plants of the riverside are in themselves for the most part large of stature and important of appearance. When one sees the upright growth and large leaves of the Great Water Dock (Rumex) and the broad round ones (2 feet or more across) of the Butter-Bur (Petasites), and the beds of the Common Reed (Phragmites), 8 to 10 feet high, with its great brown-black plumes, and the curious bright-green Horsetail (Equisetum), and the rosy banks of Willow-herb and Loose-strife, and the calm wide breadths of the white Water Lily in the still back-waters; when we see all these lessons that Nature teaches by the riverside we perceive that for the best of good effect of waterside gardening we need not be afraid of planting things of bold growth largely.

When we come to garden plants there are many families that are never so happy as when close to water, or in soil that always feels the cool, moistening influence of water within a few feet below them. Such are the whole range of the larger herbaceous

Spiræas, some of them plants of great size. Then we have the Thalictrums, the autumn-flowering Phloxes, the stately Heracleum; Telekia, Bamboos, *Arundo Donax*, the Swamp and Meadow Lilies of the northern states of America; and coming to smaller though scarcely less important plants, the Scarlet Lobelias, Oriental Poppies, many Irises, the Michaelmas Daisies, and Day Lilies; all these thrive by the waterside.

There are many shrubs that prefer a moist place, such as the Guelder Rose and the beautiful North American Halesia, Quinces, Rhododendrons, Azaleas, and Kalmias, while the lovely Fritillaries, Globe-flowers, and the double Cuckoo-flowers love damp grassy spaces. We think we may safely advise those who are making gardens by river or lake to go forward and plant with confidence, only selecting such things as are mentioned below.

As the things named are described elsewhere in this book a list only is given.

Trees and Shrubs for Swampy Places

Willows (Salix) in great variety: *S. alba* (White Willow), *S. babylonica* (Babylonian Weeping Willow), *S. purpurea*, *S. p. pendula* (American Weeping Willow), *S. Caprea*, *S. C. pendula* (Kilmarnock Weeping Willow), Cardinal Willow and Golden Willow—both these are very beautiful in winter; the stems of the former are crimson, and of the latter golden yellow, and make a remarkable picture of intense colouring; plant

NATURAL TREE GROWTH BY WATER (Burnham Beeches.)

WILLOWS BY WATERSIDE.

them in large groups—*S. daphnoides* (the White-stemmed Willow), *S. fragilis* (Crack Willow), *S. f. hasfordiana* (Red-barked Willow), and *S. hippophaifolia* (Sea Buckthorn-leaved Willow).

Populus alba (White Poplar), *P. canadensis* (Canadian Poplar), *P. nigra* (Black Poplar), Lombardy Poplar, and *B. tremula* (the Aspen). But the Poplars must not be overdone, and by pond or lakeside are often out of place. In such places the Cardinal and Yellow-barked Willow, Sea Buckthorn, and similar shrubs are more appropriate.

Common Alder, with its many varieties — Cut-leaved, the Golden-leaved, and such as *Alnus incana* and *A. serrulata*.

Taxodium distichum (Deciduous Cypress); tender green in spring and brownish red in autumn, when the leaves change colour.

Hippophæ rhamnoides (the Sea Buckthorn).

Trees and Shrubs for Moist (but not Swampy) Soil

Berberis Darwinii (Darwin's Barberry), *B. Thunbergi* (for its beautiful autumn leaf-colouring), Birch, Dogwoods, *Cornus alba* and varieties; the variety *sibirica* has brilliant-red stems. *Cotoneaster buxifolia, C. frigida, C. Nummularia, C. Simonsii;* Ash, *Myrica Gale* (Sweet Gale) and *M. asplenifolia; Ledum palustre, Nyssa aquatica* (Tupelo tree), Mountain Ash, *Quercus aquatica* (Water Oak), *Q. palustris* (Swamp Oak); *Rhamnus Frangula* (Buckthorn). Roses with brightly-

coloured heps — *Rubus biflorus* (White-stemmed Bramble), *R. fruticosus fl. pl.* (Double Pink Bramble), *R. laciniatus* (Cut-leaved Bramble), *R. spectabilis* (Salmon Berry). *Sambucus racemosa* (Red-berried Elder), *Spiræa Douglasii*, *S. hypericifolia*, *S. lindleyana*; Tamarisk. *Viburnum Opulus* (Guelder Rose); when this native shrub is weighed down with the rich red berry-clusters, it is a remarkable colour picture, and the autumn leaf tints add to its beauty.

Of Conifers, mention may be made of *Tsuga canadensis*, *Abies Menziesii*, *Cupressus thyoides*, and *Thuja gigantea*.

Bamboos: Select those of robust growth, such as *Arundinaria japonica* (*Bambusa Metake*), *A. Simoni*, *A. Veitchii*, and *A. palmata*; *Phyllostachys viridi-glaucescens* and *P. mitis*.

TREES AND SHRUBS FOR THE ROCK GARDEN

IF we think of the changes in gardening terms which have occurred during the last quarter of a century, there is surely significance in the gradual transition from the Rock Garden or Alpine Garden into the more imposing Rock Garden of our present-day language. It points to the bolder grouping—now happily adopted in most good gardens and more in accordance with Nature's pattern—which includes evergreen and flowering shrubs as well as the close-growing alpine plants, gem-like in their brilliant colours, which in earlier days were alone considered suitable for the purpose. The principle is now generally recognised that the "unstudied picturesqueness of Nature may be brought into the rule and line ordering of our gardens," and the better construction and government of the Rock Garden gives greater scope for the carrying out of this worthy effort.

In enumerating suitable shrubs for the Rock Garden, more than ordinary care should be exercised in their selection, in view of the greater difficulty of rectifying mistakes in such positions. We must not be led away by the beauty of a shrub, for instance, during its time of flowering alone, without

considering its character at other seasons and its adaptability to its special surroundings. A due sense of proportion will also hold us back from planting a spreading, hungry-natured shrub in limited space, or where it would rob and over-run more valuable but weaker plants. Such considerations as these must be left to the planter who, in his turn, must be guided by the incidental circumstances of his particular locality. It is only possible here to set down some of the best shrubs available for the purpose, and to indicate, in a very general way, the positions for which they are suitable.

Occasionally, where there is ample space, a deciduous tree of low growth may be planted to great advantage. Not long ago, in a picturesque district bordering on Western Germany, a mental note was made of the excellent effect of Wild Medlar trees, scarcely more than good-sized bushes, growing about the boulders and overhanging the edge of quarried rocks. The white flowers in spring, and the fine form and tint of the russet-brown fruit as it gradually swells during the summer months give this tree a peculiar claim on our attention where the position is suitable. But in planning the main features of the Rock Garden, we naturally turn our thoughts first to evergreen trees and shrubs, because the plants grown in such positions, being usually either alpine or herbaceous, are mostly in abeyance during the winter, and it is desirable that the rockery, no less than every other part of the garden, should be interesting even if it cannot be gay, during the

period of rest. A specimen Holly or, in exceptionally mild climates, a tall bush, from 8 to 10 feet high, of *Pittosporum undulatum*, one of the most beautiful of New Zealand evergreen trees, may be so placed, for example, as to be exceedingly pictorial; but, as a rule, we must keep our shrubs to an average maximum height of not more than from 4 to 5 feet, and, generally speaking, those of still lower stature are better suited to the ordinary Rock Garden.

Some of the small-growing Conifers, from their compact habit and distinct character, are especially well fitted to break the outline and to give contrast. We think of Pines and Spruce Firs and Cedars as majestic trees, and it is only when one comes to study them in their manifold varieties that we find how many of these range from a height of only a few inches to 3 feet, or at most to 4 feet.

Some species, it is true, do not lend themselves gracefully to the dwarfing process, becoming clumpy and inelegant, but this charge cannot be brought against many of the Cypresses and Junipers. Several of the smaller Conifers, besides, give the advantage of distinct variations of colour with the changing seasons. Reference is not now made to the golden and silver forms, so-called, which occur in most of the genera, and put on their brightest tints in spring, but to the deeper winter colouring assumed, *e.g.* by *Cupressus thyoides* (= *Retinospora ericoides*), which alters its summer tone of dark green to purple brown on the approach of cold weather; or by *Cryptomeria elegans*, a little less hardy, which changes to a fine

shade of bronzy crimson. Like other plants, Conifers differ greatly as to constitution, and judgment must be used in their choice. The dwarf alpine form of the Common Juniper (*Juniperus communis nana*) is very hardy and slow-growing, never becoming too rampant for the smallest Rock Garden, and shares the blue-grey tint which is so characteristic of this beautiful species. Very distinct from it is the lovely prostrate Savin (*J. Sabina procumbens*), one of the best of evergreen shrubs for the Rock Garden, and one most restful and satisfying to the eye at all times in its deep tones of sea green.

Cupressus pisifera, almost plumose in one of its many variations, and *C. obtusa*, both better known perhaps under the garden name of Retinosporas, are admirable, and may be used either in the normal or the dwarf forms according to the greater or less space at command. Almost the last tree, probably, which one would expect to see draping the vertical face of a rock is the Spruce Fir, yet a weeping variety (*Picea excelsa pendula*) is exceedingly effective in such a position as a foil to hanging masses of richly-coloured Aubrietias or Golden Alyssum, while it looks well at all seasons. Mention may here be made of a remarkable Conifer, *Cunninghamia sinensis*, of great beauty and very distinct character, which takes the shape, in our climate, of a spreading bush, though in its native habitat it grows into a tree of noble dimensions. It is suitable only for a Rock Garden of some boldness of construction, with which a mild climate and a sheltered position are fortuitously com-

bined, but under such happy circumstances a place should certainly be found for this handsome and little-known China Fir.

Another uncommon coniferous shrub, also very distinct and more generally useful than the last, is *Podocarpus alpina*. Though a native of Tasmania, it grows at high elevations, and is able to resist severe frost. Dark green in foliage, only about 2 feet in height, and of a somewhat spreading nature, it is never out of place in the Rock Garden, whether large or small.

From Conifers we may pass to Veronicas, certain of which might almost be mistaken for some minute form of Cypress. Of this character is a small group known in New Zealand, the natural habitat of a large number of shrubby species, by the apposite name of Whipcord Veronicas. Being themselves alpine, are particularly well suited for grouping with low-growing mountain plants. Six species or varieties of this interesting section grow naturally at elevations ranging from 7000 to 4000 feet, and are much more hardy than is generally supposed. These are: *V. cupressoides, V. c. var. variabilis, V. lycopodioides, V. Armstrongii, V. Hectori, V. loganioides.*

The form of *V. cupressoides*, known as *variabilis*, was mistaken, on its first introduction, for a distinct species, *V. salicornioides*, and may still be met with under that name. The small violet or white flowers of these miniature evergreen shrubs are not perhaps much to be taken into account, but they have a distinct value of their own as rock-work greenery.

There are other dwarf New Zealand Veronicas of a leafy character, differing essentially from these mimetic species, such as *V. carnosula* and *V. pinguifolia*, also inhabiting regions 5000 feet above the sea-level, which are suited for localities with average advantages of climate. Others again, such as *V. Lyallii*, *V. glauco-cærulea*, and *V. hulkeana*, though they grow naturally at lower altitudes, and must be reckoned only half-hardy, may yet be serviceable for Rock Gardens on the southern sea-board, or on the west coast of Scotland. Belonging to the larger-growing and more familiar species of Shrubby Veronica, mention may be made of a good purple-flowered hybrid, of very compact growth, known as Purple King, which is exceedingly ornamental from its free-flowering habit. Many of the losses sustained amongst these interesting New Zealand shrubs are owing to drought rather than to frost, and their extreme susceptibility to dryness at the root is a fact not recognised as it should be.

Hardy Heaths are of the utmost value in the Rock Garden, and range in height from the 6 feet or more of *Erica arborea* to the 6 inches of the well-known *E. carnea*, and can be used in rough places, where more delicate plants might not thrive. A sudden emergency once arose in the experience of the writer, when a shelving mass of earth had to be shored-up as quickly as possible with such material as lay ready to hand at the moment. This happened to be found in a heap of ugly, yellowish, water-worn boulders of great size, which abound in that particular locality,

CISTUSES AND ROSES IN THE ROCK GARDEN.
(In the left lower corner, Cistus hirsutus ; middle, Rosa alba ; to right, R. rugosa Mme. Georges Bruant.)

DWARF SHRUBS ON ROCK GARDEN.

at no great distance below the ground-level, and must be dug out when any deep trenching has to be done. There was no time to be wasted in facing the stones, which would have made them more sightly, and they had to be used as they were. Fortunately a large consignment of the best hardy Heaths had lately arrived from the Darley Dale Nurseries, and were immediately seized upon to cover up the ugliness of the hastily-built-up barricade. Boulders and Heaths, however, took to each other kindly, in spite of a soil by no means specially suitable, and with the addition, later, of a few good kinds of Cistus and other shrubs, the bank still remains as happy a bit of rough planting as could be desired.

Of the taller Heaths, *E. arborea* is somewhat tender, and is not so generally useful as *E. mediterranea* or *E. codonodes*. A hybrid form—*E. mediterranea* × *E. carnea*—is excellent, and comes into flower about Christmas, in advance of either of its parents, when its pale-purple spikes are very welcome, and are quite distinct from the rosy-red flowers of *E. carnea*. The foliage of hardy Heaths is never unsightly, but the persistent dead flowers are, and these should always be clipped off as soon as their beauty is over, or the new growth will break away above the withered flowers, leaving, in many cases, straggling and unclothed branches. The omission of this needful work every season is a fruitful source of the raggedness which brings some discredit on these otherwise attractive plants.

Many flowering shrubs of the same natural order

as Heaths, but unlike them in general appearance, such as the Alpine Rhododendrons, *R. ferrugineum* and *R. hirsutum*, and the less well-known but very beautiful and distinct *R. racemosum*, as well as some of the miniature varieties of *Azalea indica*, notably *R. obtusa* and its forms, seem peculiarly suitable for the Rock Garden. Again, where rock meets more level ground, and the trickle of a stream can be so directed as to give moisture without sogginess, a considerable number of peat-loving evergreen shrubs belonging to the same order, of the type of *Gaultheria*, *Vaccinium*, and *Pieris*, may be used with excellent effect. *Gaultheria Shallon*, indeed, is a singularly fine shrub in any position, and is not very exacting in any of its requirements. Growing about 2 feet high, with purple leaf-tints in winter, and spikes of white waxy flowers, brightly tinged with red, in spring, which are followed by purple fruit, few things can surpass it in its way. For carpeting moist spots, the little *G. procumbeus*, which rises scarcely 3 inches from the ground, will fill a useful place with its winter colouring of crimson brown. Shrubs of this class are well worth study by those whose locality admits of their cultivation.

For dry, sunny, and stony banks Rock Roses may be chosen, but the position must be wind-screened, a more important factor in the question of their hardiness than cold. The large-growing Gum Cistus is well known and tolerably hardy everywhere, and so also is *C. laurifolius*, but there are several most desirable species of dwarfer growth, such as the

white, crimson-spotted *C. lusitanicus*, the pink-flowered *C. villosus*, the bright-red *C. crispus*, and the pure white *C. florentinus*, which are quite happy in sheltered rock walks especially by the sea; they have been also grown with success in many colder situations inland. The Cistineæ, at best, are somewhat short-lived, and lose vigour and power of resistance as they grow older. Keep up, therefore, young, thrifty stock by yearly cuttings to fill up inevitable gaps, which is a matter of no cultural difficulty. Where Rock Roses are out of the question, their place may worthily be filled by the hardier shrubby *Helianthemums*, though they differ greatly from Cistineæ in their trailing habit and smaller flowers. The breadths of brilliant colour given by these Sun Roses while in bloom are invaluable, and may be enjoyed to the full in almost any locality, while the many variations of tint, from deep green to ashen grey, in their leafage should also be taken into consideration, as it increases their usefulness when out of flower.

No list of good shrubs for the Rock Garden would be complete without some reference to *Yuccas*, which for all practical purposes must be included under that head. Groups of these magnificent plants, with their sub-tropical effect, cannot be surpassed for nobility of outline and stateliness of flower. To do them full justice, they must have space to develop their grand proportions, but this may often be found on the ridge or upper slope, even in rock-work of limited character. *Y. gloriosa*, with its fine form, *Y. recurva*, and the stemless *Y. flaccida*, of smaller

growth, are amongst the best and hardiest kinds, and to these may be added *Y. angustifolia*, another valuable and nearly stemless species.

It is only possible, in restricted space, to touch in a very cursory way upon a few of the available groups of dwarf-growing shrubs. Many more than have been mentioned will occur readily to the minds of those who are at all conversant with plants, such as *Abelia rupestris*, *Magnolia stellata*, several beautiful species of *Daphne*, some of the St. John's Worts, of low-growing *Cytisus*, and others which may be classed under the head of miscellaneous. The subjoined list, though it does not pretend to be exhaustive, will be found of use, either for purposes of winter greenery or for summer embellishment, by those who are seeking good and suitable dwarf shrubs for planting, under varied conditions in the Rock Garden.

DWARF SHRUBS FOR THE ROCK GARDEN

Hardy Evergreen

Buxus sempervirens vars.
Cotoneaster buxifolia.
Danæa Laurus (Alexandrian Laurel).
Gaultheria Shallon.
Lavendula vera (Lavender).
Mahonia Aquifolium.
Osmanthus Aquifolium.
Pernettya mucronata.
Rosmarinus officinalis (Rosemary).
Skimmia Foremani.
Veronica (Whipcord).
„ cupressoides.
„ cup. var. variabilis.
„ Armstrongii.
„ Hectori.
„ loganioides.
„ lycopodioides.

Conifers

Cupressus obtusa nana.
„ pisifera.
„ thyoides.
Juniperus communis nana.
„ Sabina prostrata.
Picea excelsa clanbrassiliana.
„ ex. pendula.
„ ex. pumila glauca.
Podocarpus alpina.
Taxus baccata and vars.

HARDY FLOWERING SHRUBS

Amygdalus nana.
Azalea (Rhododendron) amæna.
„ indica and vars.
„ mollis.
Cytisus Ardoini.
„ Kewensis.
„ purpureus.
Daphne blagayana.
„ Cneorum.
„ Mezereum.
Dryas octopetala.
Erica carnea.
„ ciliaris.
„ codonodes.
„ mediterranea.
„ m. hybrida.
Genista germanica.
„ pilosa.
Helianthemum vars.
Hypericum moserianum.
„ olympicum.
„ patulum.
Kalmia angustifolia.
„ glauca.
Magnolia stellata.
Olearia Haastii.
Ononis rotundifolia.
Philadelphus microphyllus.
Phlomis fruticosa.
Polygala Chamæbuxus.
Rhododendron ferrugineum.
„ hirsutum.
„ racemosum.
Rosa lutea.
„ pimpinellifolia.
„ xanthina (Ecæ).
Rubus arcticus.
Spiræa arguta.
„ Bumalda.
„ decumbens, &c.
Veronica buxifolia.
„ carnosula.
„ pinguifolia.
„ linifolia.
Yucca angustifolia.
„ filamentosa.
„ fil. var. flaccida.
„ gloriosa.
„ recurvifolia.

Flowering and other Shrubs for Sheltered Situations and Mild Climate

Abelia rupestris.
Cistus albidus.
„ crispus.
„ lusitanicus.
„ villosus.
Coronilla Emerus.
„ glauca.
Daphne Dauphini.
„ Genkwa.
Desfontainea spinosa.
Dracæna australis.
Fabiana imbricata.
Escallonia macrantha.
„ montevidensis.
„ philippiana and hybrids.
Eugenia Ugni.
Fatsia japonica.
Grevillea rosmarinifolia.
Helianthemum formosum.
Linum arboreum.
Myrtus communis.
„ box leaved.
Olearia dentata.
Ozothamnus rosmarinifolius.
Philesia buxifolia.
Pittosporum Tobira.
„ undulata.
Rhododendron.
Rosa berberifolia.
Rubus rosæfolius.
Swainsonia alba.
Trachycarpus excelsa (Chinese Fan Palm).
Veronica chathamica.
„ epacridea.
„ Fairfieldii.
„ glauco-cœrulea.
„ pimeleoides.
„ speciosa.
„ Traversii.
„ Purple King (hyb.).

Conifers.

Cryptomeria elegans.
Cunninghamia sinensis.

For Moist Peaty Soil at the Foot of Rocks

Andromeda polifolia.
Bryanthus erectus.
Cassandra calyculata.
Cassiope tetragona.
Dabœcia polifolia (Irish Heath).
Gaultheria procumbens.
Ledum palustre.
Leucothoë axillaris.
„ Catesbæi.
Lycopodium dendroideum.
Myrica asplenifolia.
„ Gale.
Pieris floribunda.
„ japonica.
Rhodothamnus chamæcistus.
Salix reticulata.
Selaginella Douglasii.
Vaccinium crassifolium.
„ uliginosum.
„ Vitis-idæa.
Zenobia speciosa.

ONONIS FRUTICOSA (*Shrubby Rest Harrow*) *AT EXETER.*

TREE IN COURSE OF REMOVAL WITH ONE OF BARRON'S MACHINES.

REMOVAL OF LARGE TREES AND SHRUBS

PROBABLY no garden operation requires more time and labour than the proper removal of large trees and shrubs from one part of a garden to another. Time, as it will take two, or even three, days to remove a large tree to a distance; and labour, as the services of from eight to twelve men will be required to accomplish the work. It is not, therefore, an operation to be lightly undertaken or got through in a hurry.

Before proceeding to describe the various ways of moving large specimen plants, it will be well to consider the trees and shrubs that are generally required to be moved. Three numbered lists are given arranged according to the roots of the shrubs or trees—that is, those that, when they have stood for some time in one place, are most alike as regards the way their roots are placed together; and the lists are also some guide when transplanting, as the chances of life after removal are greatest in No. 1, less in No. 2, and considerably lower in No. 3.

No. 1.	*No.* 2.	*No.* 3.
Andromeda.	Ailantus.	Arbutus.
Azalea.	Alder.	Aucuba.
Clethra.	Almond.	Bay Laurel.

No. 1.	*No.* 2.	*No.* 3.
Kalmia.	Amelanchier.	Carya.
Rhododendron.	Ash.	Catalpa.
Vaccinium.	Beech.	Cotoneaster.
	Birch.	Diospyros.
	Box.	Elæagnus.
	Celtis.	Halesia.
	Chestnut.	Hamamelis.
	Cratægus.	Hippophæ.
	Elm.	Holly.
	Flowering Cherries.	Liquidambar.
	Hornbeam.	Laurel (Common).
	Horse-Chestnut.	,, (Portugal).
	Laburnum.	Magnolia.
	Lime.	Osmanthus.
	Malus.	Phillyræa.
	Maple.	Rhamnus.
	Mulberry.	Styrax.
	Oak.	Tulip Tree.
	Peach.	Viburnum.
	Plane.	Walnut.
	Poplar.	Yew.
	Pyrus.	
	Robinia.	Coniferæ.
	Willow.	

It will be noticed that Conifers are mentioned in the third list, and even in nurseries where they are regularly moved the mortality amongst them is very high ; and the removal of large Conifers should never be attempted except with a transplanting machine, and expert men to handle it. As a rule, it will be found cheaper and better to buy young plants than to attempt the removal of large ones that have stood for some years without root disturbance. Such

flowering shrubs as *Spiræa, Philadelphus, Kerria, Ribes,* &c., can be safely moved without much trouble, as they make a mass of roots which will hold a good ball of soil unless it is very dry. All are practically certain to live if carefully planted and well watered afterwards.

There are several ways of moving large trees, the simplest and quickest being by a proper transplanting machine, which consists of a framework on wheels fitted with a system of rollers and levers. For moderately-sized trees, say, to about 12 feet high, a two-wheeled machine is sufficient. This is moved by eight or ten men. For trees above 12 feet high a four-wheeled machine is required, with two, or perhaps three, horses to draw it. The first will take a ball of soil weighing from two to three tons, the latter anything to ten tons, or even more.

In preparing the tree for the small machine the ball is made round, and slightly smaller than the width of the machine, a trench being cut round the tree to a depth of 3 feet or so, the actual depth depending on the roots, but the soil should be removed a foot lower than the lowest roots. On no account undermine the ball until the proper depth has been reached. A proper machine-pick is the best thing to use under the ball, carefully working out sufficient soil to introduce a board 6 inches wide and about 1½ inches thick on each side of the ball. The soil immediately under the centre of the ball should be left intact. When the boards are in position ropes are passed under them on each side and led

up over the rollers on the machine and fastened, and then by levers the ropes are rolled up, swinging the plant up cleanly and with a good ball of soil. Before putting the ropes under, however, a stout piece of canvas or mat should be tied round the ball with a couple of cords, between which and the canvas seven or eight pieces of narrow flat board should be fixed to prevent the cords from cutting the ball. The rear part of the machine is made to be taken out so that it can be pushed right over a plant, and it should be run on planks on soft ground.

With the large transplanting machine a ball of soil of almost any size can be taken, but the method of preparing it is somewhat different. It should be made nearly square, being rather longer than it is broad. When the proper depth has been reached make a hole about 2 feet wide under the centre of the ball, and running entirely through the longer way of it. Through this hole one, or even two, broad planks 3 inches thick should be passed. On each end of these, where they project beyond the ball, a stout plank is laid on edge, and two others placed lengthwise to fit above the first two. These planks should all be cut to fit tightly into each other. If necessary, owing to the depth of the ball, another tier of planks should be placed above the first to insure stability. The machine is then placed over the plant, and the whole, by means of chains and levers, is swung up off the ground, and then ready to be taken anywhere. This machine, however, should only be used by those who have had experience with

it, as it is difficult and cumbersome to handle, and in the hands of novices is liable to cause serious accidents.

Where no transplanting machine exists, other mechanical contrivances must be used to move a large tree. Rollers and planks, a low trolley, or a draw-board, as it is called, are the best. The preparation for removal is the same for these means as it is for a machine, with the exception of getting under it, which varies according to the means employed. For rollers and planks the soil should be worked out directly under the centre of the ball, and planks put through to form a bed to run the shrub or tree on. On these a roller should be placed, working the soil out at the sides so that it is well under the ball, but not going so far under as to undermine it, and cause it to drop over. Above the roller put one wide plank to form the bottom of the ball, and by means of a rope round it the whole can be taken where required. When moving it, however, it is well to raise the rear half by means of a broad lever or a lifting-jack, which, in conjunction with a steady pull on the rope, should start the plant comfortably on its journey.

When a low trolley is used the ball of soil must be firm, and not liable to break to pieces when handled with reasonable care. Having cut out the ball to the required depth, work under it all round, merely leaving enough in the centre to support it. If possible, work off some of the upper soil to decrease the weight, but this depends entirely upon the roots,

and the way they run. If small roots are plentiful at the top, little or no soil can be removed, but if they are lower down, then the upper soil may be removed with advantage. Having worked under the ball, lay two stout planks under it well packed up to the centre, and then with two strong poles under the ends of the planks lift the whole on the trolley. If the work is carefully thought out, it is possible to make the actual lifting a very small operation by bringing the trolley close and lowering it considerably.

The draw-board is a handy contrivance for moderate-sized trees or shrubs which will hold a good ball of soil. It is made in two forms. One consists of a piece of well-seasoned oak 3 inches thick, and about 3 feet long by 2 to 2½ feet wide at the widest part, from which it slopes down to a thick end, where a stout swivel-ring is fixed to take a rope. The other form is a kind of trolley, and consists of a frame 3 feet long by 2 feet wide; it runs on rollers that work on bent irons fastened to the framework, the whole standing about 4 inches high. Either of these can be used for moving plants the ball of soil attached to which is not larger than the board. They will take a heavy plant with comparative ease, and are especially useful for moving large Rhododendrons and other American shrubs. To get them under a plant cut out the ball of soil to the proper depth, and work under it from the front, that is, the direction in which the plant is to go, keeping the ball wedged up during the process,

not by having a man to pull the top over, but by using wedges or levers underneath it, until sufficient soil has been worked out to allow the board to be inserted. When the board is in position the rope should be passed through the ring and then around the collar, using a piece of mat to keep it from rubbing the bark off, and then back through the ring again. It is well to run the board over planks on soft ground to reduce the labour of pulling.

In putting the tree or shrub into its new position, carefully measure the size of the ball, and make the hole considerably larger and slightly deeper, breaking up the bottom well. When the tree or shrub is in position ram the soil tightly round it until it is about two-thirds covered, when the hole should be completely filled with water, covering in the remainder when the water has drained away. The stem must also be made secure by means of stakes or cords, otherwise wind will cause damage to the roots.

When the ground is dry under a tree that is to be moved nothing should be done until it has been thoroughly soaked. To do this a trench 2 feet deep and as narrow as possible should be taken out all round, and gradually filled in with water, pouring it in steadily, away from the ball rather than to it, and persevere with this watering till the ball of soil under the tree is thoroughly saturated. Leave it for at least twenty-four hours to drain. Three points must not be forgotten: (1) Wrap the ball of soil securely round with canvas as soon as possible; (2)

never use the stem of a tree as a lever in moving the ball—this should always be moved from below, and the stem never touched on any account; (3) always allow plenty of room for working.

Moving large trees is not easy and must not be lightly undertaken. It involves much time, labour, and expense, in most cases far more than the trees are worth. Trees 8 or 10 feet high may be easily moved, but above that height the work should be done by an expert. Trees and shrubs of considerable size can be purchased at a moderate price from good tree nurseries, where they have been regularly transplanted, and if carefully planted will soon make good specimens.

It is in the planting of trees that so many failures occur as a rule. A good tree may be obtained, arrive in excellent condition, and yet be planted in such a way that success is out of the question. The fault, as a matter of course, is put on the man who supplied the tree, not on the one who killed it by improper planting. Those who think of moving large trees or shrubs should not do so until the probable cost has been considered, and the advice and help obtained of some one who has handled big trees before. The expert will be able to say if a tree can bear removal, or whether it is better destroyed, and its place filled with a young and vigorous specimen from a nursery.

YOUNG TREES AND SUNSTROKE

IT is most noticeable that the stems of young trees of from 8 to about 14 feet in height are apt in some seasons to get much damaged, so much so that the trees are rarely satisfactory for some years afterwards, even if they do not die outright. The mischief is usually not seen until it is too late to mend matters, and is found more as a rule on young trees with small heads standing out singly than where they are planted amongst undergrowth or in partial shade. If careful notice is taken it will be found that the stems are damaged on the south side, or it may be east or west of south, but never on the north side, and is directly caused by the rays of the sun being too hot for the young stems to bear. The trees most liable to sunstroke—which it practically amounts to—are the Lime, Willow, Horse Chestnut, Sweet Chestnut, Birch, Mountain Ash, Ash, and Plane, and generally in the order they are given, the softer wooded trees suffering more severely than those of harder growth. The Oak, Elm, and Beech are seldom much damaged by the sun, though in cases of failure it will be well to notice the stems and see how far the direct rays of the sun are responsible for the death of the tree.

The first marks of sunstroke are seen in the shape

of longitudinal cracks in the bark, which is also slightly browned and flattened, as if there were a hollow beneath. The part affected is from about 1 to 3 feet in length, and from 1 to 3 inches in width. If the bark is cut away the wood beneath will be found perfectly firm, but hard and dry, more like a piece of seasoned wood than part of a growing tree. When such is the case the only thing that can be done is to cut away the bark back to the living tissue, thoroughly coat the wound with gas tar, and shade the stem afterwards with a few branches or something that does not need to be fastened on the stem. Hay or straw bands cannot be altogether recommended, as anything which excludes the light tends to the softening of the young bark. This should be avoided, as the firmer the bark the better will be the ultimate success of the tree. Iron tree-guards, though not beautiful, have the advantage of protecting the stems of young trees from the sun as well as from the attacks of animals. In addition to the slight shade they give, the iron, being a good conductor of heat, takes up a large amount of the heat rays which would otherwise be directed full upon the stem.

A hot and dry season is no more likely to cause sunstroke than a wet one, and probably not so much, as we have noticed it in sunless years quite as much as in bright summers. The time when it is most likely to happen is when a few days of hot sunshine follow a spell of wet weather, as the wood is then soft and full of moisture, and is more

liable to be scorched than during a period of prolonged sunshine.

When trees are planted out singly it is well to choose those with spreading heads and low stems, as then the tree will shade itself to a great extent, the short amount of bare stem being less exposed to the sun's rays than a taller one. After all, this is only Nature's method of protection, as, in a wild state, no young tree is bare-stemmed, except in a wood, where it is shaded by those near it. On the edge of a wood, or in the open, young trees are furnished to the ground with foliage, which is not shed until the stem has become hardened enough to withstand climatic vicissitudes. If trees with tall stems are the only ones available, then the stems should be shaded by some means for a year or two, especially when they have become established and are making strong, sappy growths, as the stem is practically in the same condition and apt to be scorched by a sudden burst of hot sunshine.

Goat and Wood-Leopard Moths

Sunstroke must not be confounded with the ravages of the caterpillars of the Goat Moth and Wood-Leopard Moth, the external signs of which are much the same, but on the bark being removed one or two channels almost the size of a man's little finger are to be seen, together with accumulations of wet sawdust-like material deposited by the caterpillar. These are exterminated by thrusting a

stout wire into the channels until the grub is killed, and afterwards cutting away the dead bark and tarring the wound thoroughly. The tree should also be securely staked, otherwise it will probably snap off in the first high wind.

SHADE TREES FOR STREETS

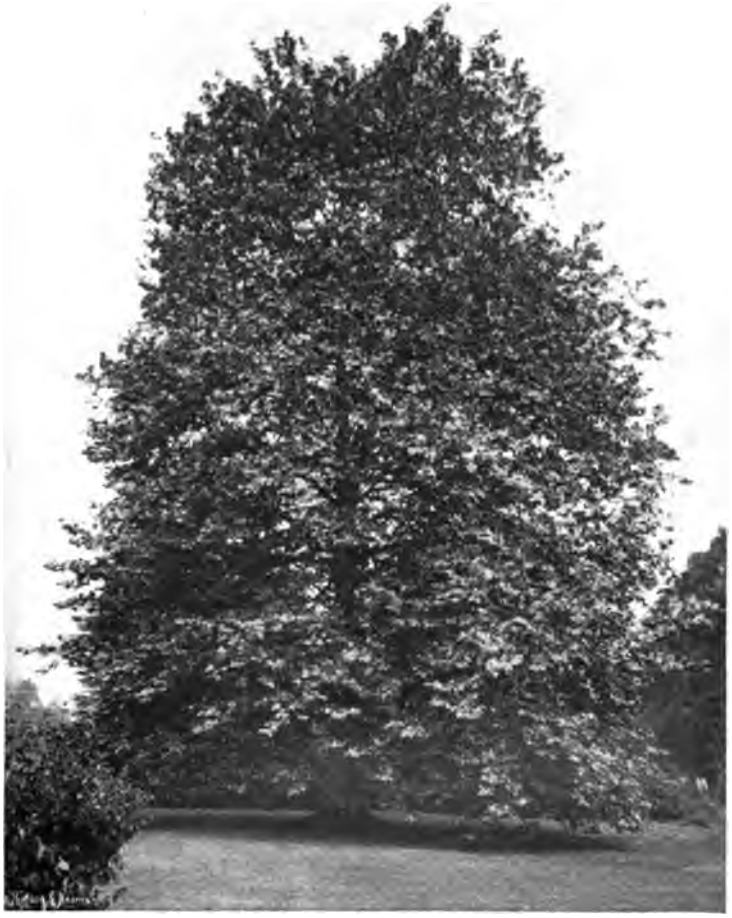
IN the middle ages it was accounted an act of piety to make or maintain a road or a bridge, or to do anything in connexion with them that would conduce to the safety or comfort of the wayfarer. The planting of trees for shade, or the placing of a shaded bench for rest came within the same category of pious works. In our days, when rush and hurry and the pressure of business, and the worship of bare utility fill the minds of most men, there are many who have almost forgotten the gracious aspects of the more leisurely life. It is probably from this cause that so many opportunities are lost that might be seized by those in authority for making the lives of our fellow-creatures somewhat easier and pleasanter.

In days of extreme heat what a difference in comfort there would be between the bare sun-baked expanses of the streets of many a town, such as we all know, and the same spaces carefully planted with shade-giving trees. In very narrow streets trees are, of course, out of the question, or in any street whose width is not enough to allow of easy traffic and trees as well, but one cannot walk through any town, except the very few in which the question has already been considered and satisfactorily answered,

without seeing many a street or waste space or corner where a row or a group or even a single tree would not add immensely to both beauty and comfort. Where there is plenty of width, and especially where houses fall back a little from the road, the trees may well stand just within the edge of the footpath or pavement. Should there be still more width, there may be a row in the middle of the road. In this case the middle row of trees should not be quite evenly continuous, but perhaps five or six trees and then a gap, formed by leaving out one tree, in order to allow the traffic to move from side to side of the road. In many a town where a street runs north-east and south-west, a row of trees on its south-western side only might be an inestimable boon.

Even in country villages there is often a bare place, especially where roads meet, where a few trees well planted and a plain strong oak bench would be a comfort and a pleasure to many hard-working folk, and might be the means of converting unsightliness into beauty.

For towns the Plane has the best character, but other good trees are Wych Elm and Hornbeam, Sycamore, Maple, Lime, Lombardy Poplar, and Horse Chestnut. The spreading growth of the Horse Chestnut commends it rather for a space like the *place* of a foreign town. Here is also the place for Limes, for though they are good street trees, yet when in bloom the strong, sweet scent, although a passing whiff is delicious, might be an



PLANE TREE (*Platanus orientalis*).

annoyance if poured continuously into the windows of houses during the blooming time.

The Wild Cherry, with its quantity of early bloom, would be a beautiful street tree, and in places where trees of rather smaller growth are desired there is the Bird Cherry and the Mountain Ash. The large American Mountain Ash is a good street tree, in autumn loaded with its handsome bunches of scarlet fruit.

The larger Willows are also charming trees for streets. Many of the trees named, if their tops spread too near the houses, may, with good effect, be pollarded about 10 feet from the ground.

TREES AND SHRUBS IN SCOTLAND

THE following list has been kindly sent me by a great lover of trees and shrubs who lives at Forres. My correspondent writes: "I have grown all the plants in my list in my own garden, except *Buddleia globosa* and *Aralia mandschurica*, but the latter is grown in quantity by several of my neighbours, and there are also several fine plants of the Buddleia in many gardens in sheltered spots. My experience is that many plants are quite frost-proof but cannot stand cold winds. This applies more especially to the shrubby Veronicas. I have seen them in the Edinburgh Botanic Gardens as if scorched with fire on the exposed side, while they were untouched where sheltered from the north and east. My own garden is fairly well sheltered."

Amelanchier canadensis.—Hardy, free-flowering, beautiful at all times.

Aralia (*Dimorphanthus*) *mandschurica.*—Useful in some positions for its curious habit of growth and rather handsome foliage; quite hardy.

Aristolochia Sipho.—This has curious and inconspicuous flowers, which give this climbing plant its popular name of "Dutchman's Pipe." It can be grown on a wall, in which position, perhaps, its fine foliage is seen to the best advantage, but it is quite

hardy and looks well climbing into a thin tree such as the Common Almond.

Berberis (*Mahonia*) *Aquifolium.*—A handsome plant at all times, and will even grow under the shade of trees.

Berberis Darwinii.—Very bright in flower. Young and sappy shoots get killed back in winter.

Berberis Thunbergi.—A most attractive Berberis; it makes a small neat-growing bush to which the adjective "sparkling" might be applied. Its chief glory is its autumnal foliage, and a large clump in September is "a sight to see"; quite hardy.

Berberis vulgaris.—Very beautiful when clustered with fruit. The purple-leaved variety (*B. v. purpurea*) is most useful for its foliage.

Betula purpurea.—A good foliage tree.

Buddleia globosa.—This does well in a warm sheltered spot facing south-west, where the morning sun in winter will not touch it too soon. It also objects to exposure to cold winds.

Calycanthus floridus.—Quite hardy, and grows well in half-shady places.

Ceanothus azureus.—This succeeds either trained to a wall or as a bush. In the latter case it should be in a sheltered position. It seems quite frost-proof, and its blue flowers are very beautiful at a time when few shrubs are in bloom (July and August). Its shoots should be well thinned, and those left shortened as soon as the buds begin to show signs of movement in the spring. The best form I have tried is Gloire de Versailles.

Choisya ternata (Mexican Orange Flower).—This is well worth growing as a bush in a sheltered angle of a wall, where it can be protected in winter with a hurdle or some such contrivance, lightly thatched with Broom. It is even then, in very severe weather, cut about the points of the shoots, which, of course, spoils the blooming; but it soon grows through again, and it is worth growing for its foliage alone.

Clematis.—These mostly do well, and the newer sorts are very attractive, but for all purposes it is very hard to beat *C. montana* and *C. Jackmani*, the former in May and the latter for the autumn.

Clethra alnifolia.—A neat and free-flowering shrub, with spikes of white flowers in August; it is very hardy and useful, as few shrubs are in flower at that time.

Cornus alba.—A clump of this Dogwood is very effective in winter, especially when the sun is shining on its bright-red shoots. *C. a. Spæthii* is a good variegated variety.

Corylus purpurea.—A good purple-leaved tree.

Cotoneaster microphylla.—Quite hardy either as a bush or on a wall.

Cytisus albus.—No garden should be without this beautiful Broom. *C. præcox*, the Cream Broom, is a dwarfer but no less beautiful variety; it is very pretty grouped with a few plants of *C. purpureus*, which flowers at the same time. Another fine Broom is the red and yellow variety of the Common Broom (*C. scoparius andreanus*). The Brooms will grow anywhere, but prefer an open place in full sun. They

CYTISUS PRÆCOX (*Spring*).

A VARIETY OF MAHALEB CHERRY (*Prunus Mahaleb, var. chrysocarpa*).

should be cut hard back after flowering, and if the young seed-pods can be picked off so much the better.

Daphne Cneorum.—A bright little shrub best grown on the rock garden; quite hardy.

Daphne Laureola.—This has fine foliage and will grow in quite a shady place.

Daphne Mezereum.—A beautiful early-flowering Daphne, too well known for description.

Deutzia crenata.—A most useful hardy shrub, growing to a good size. The variety, Pride of Rochester, is very pretty.

Diervilla (*Weigela*).—Indispensable shrubs, very hardy, free-flowering, and easily grown. The flowering shoots should be cut back to strong young wood as soon as the flowers fade. They are most accommodating in this respect, as the strongest of the young shoots start well back and not at the points, as is usual with most plants. Good varieties are Eva Rathke, *Hortensis nivea*, and *rosea*.

Escallonia macrantha.—A good wall shrub.

Escallonia philippiana.—Hardier than *E. macrantha*, and can be grown as a bush in a sheltered spot.

Forsythia suspensa.—Quite hardy, and very beautiful in early spring, as it flowers before the leaf-buds burst. It should be cut back to young growths after the flower is over.

Garrya elliptica.—Quite hardy as a bush.

Fuchsia Riccartoni.—This gets cut down every winter, but is never killed, and it flowers abundantly every year treated as a hardy herbaceous plant.

Genista tinctoria fl. pl.—A low-growing trailing Genista, useful for the rock garden and flowering when many of the alpines are over.

Genista virgata.—A very different plant to the above, and will make a very large bush, covered with pale-yellow flowers in late summer. A good shrub.

Halesia tetraptera.—Quite hardy and attractive both in bloom and foliage.

Hamamelis arborea.—This is quite hardy, but grows very slowly. It flowers in a small state, but not very freely. I have only had this plant for four years, but I think it will do very well, and should flower more freely when a bit larger.

Hedysarum multijugum.—Quite hardy. An attractive shrub, with spikes of reddish pea-like flowers in July and August. It increases freely from the root by suckers. Thin and cut back the shoots in spring.

Helianthemum vulgare (Rock Rose).—There are many garden varieties of this, both double and single, the single sorts being the most attractive. They are quite hardy on a warm and sunny rock garden.

Hydrangea paniculata.—Hardy. A splendid low-growing shrub, flowering in autumn. A group of this, with a few plants of *Prunus Pissardi* cut hard back every spring to keep them small, is very effective, and the group can be carpeted with Lily of the Valley or London Pride to cover the bare soil underneath. The shoots of the Hydrangea should be well thinned, and those left cut hard back in the spring. It well repays a dose or two of liquid manure in the

growing season. The variety, *grandiflora*, is better than the type.

Hypericum calycinum (Rose of Sharon).—Grows well in half shade. It is a dwarf plant, very pretty, but perhaps too often seen. Useful for carpeting other shrubs.

Jasminum nudiflorum.—Best on a wall. Winter flowering (yellow) and very pretty when in bloom.

Jasminum officinale.—Requires a wall, but does well while young. It is not a very long-lived plant here.

Kalmia latifolia.—Very attractive pink flowers; hardy, and will do wherever Rhododendrons flourish.

Kerria japonica.—A pretty yellow-flowered shrub that increases rapidly from the root. The double-flowered variety is the most commonly grown.

Laburnum.—Too well known for description. *L. Adami* is curious and worth growing.

Lavendula Spica.—The Lavender needs no description.

Leycesteria formosa.—A good plant for a shady place. It grows well under trees, and is very hardy.

Liriodendron tulipifera.—Grows well here, and is quite hardy, but seldom flowers so far north.

Ligustrum ovalifolium (Privet).—The golden form of this is good and bright.

Lonicera periclymenum.—The common native Honeysuckle is an indispensable climber, and will grow almost anywhere; but looks best, perhaps, climbing up trees, or over shrubs or hedges. The variety,

serotina, flowers later than the type, and is best known under the name of Late Dutch. *L. Sullivantii* is a shrubby sort, with not unattractive flowers of a brownish-orange colour.

Magnolia.—The only one I have tried is *M. stellata*, which has proved quite hardy, and I have no doubt that several others would do quite as well in sheltered places.

Neillia opulifolia (*Spiræa opulifolia*).—Quite hardy.

Pernettya mucronata.—Does well.

Pieris (*Andromeda*) *floribunda.*—Is quite hardy and very beautiful early in the year. Will grow in soils that suit Rhododendrons.

Potentilla fruticosa.—A little summer-flowering shrub, with yellow flowers. It does well on the upper parts of the rock garden, and is quite hardy.

Padus (*Cerasus*) *Mahaleb pendula.*—A very attractive little weeping tree, with small white flowers in spring.

Pyrus.—The following do well here: *P. Malus floribunda*, *P. coronaria*, *P. lobata* (syn. *Mespilus grandiflora*), and, of course, the native Rowan tree (*P. Aucuparia*). The family of Apples enjoy a well-drained place, being impatient of too much wet at the roots; otherwise, their culture is of the simplest. They should be allowed to grow as they will, only cutting out any branches that would be obviously better away, and dead wood if any.

Rhododendrons and *Azaleas* luxuriate here. The common *R. ponticum* sows itself in the woods. I have not yet tried the Himalayan Rhododendrons, but from what I have seen of them in the Edinburgh

Botanic Gardens, which are much exposed to cold winds, I feel fairly certain I could grow them here, where I can give them more protection.

Rhodotypus kerrioides.—A very pretty hardy shrub, flowering on and off all the summer. It has very clean white flowers, and from appearances looks as though a cross with Kerria might be successful. The Rhodotypus seeds freely here. It grows to a good size.

Rhus Cotinus.—Another good shrub, attractive either in flower or foliage, and the latter turns to a good colour in autumn.

Ribes.—No garden should be without a plant of the Common Ribes. I also grow *Aureum* and a pale pinkish-white sort.

Robinia hispida (Rose Acacia).—This is doing well in a corner sheltered from the north, east, and west by evergreens.

Roses.—The best that I grow as shrubs (in the garden sense) are the Penzance Briars, *Rosa rugosa* (Japanese Rose), Austrian Briars, *R. spinosissima, Blairii II.*, Charles Lawson, *R. macrantha, R. alpina,* &c. These Roses stand up and make a good bush in a sheltered place, without staking or any other trouble. Very little pruning is needful, and that after the flowers are over, cutting out weak wood and shortening some of the old shoots back to where young ones are breaking vigorously.

Rubus deliciosus.—Very pretty white flowers, large for a bramble. It appears to be quite hardy, but is not a very strong grower.

Ruscus aculeatus (Butcher's Broom). — An inconspicuous little shrub that grows well under trees.

Spartium junceum (Spanish Broom).—A good shrub for a sheltered bank; it has spikes of bright-yellow flowers in July.

Spiræa.—Most of the Spiræas do well here. The following are the best of those I grow: *S. canescens*, very pretty habit of growth and foliage; *S. discolor* (*ariæfolia*), *S. japonica* (vars. *alba*, *bumalda*, and Anthony Waterer), the last-mentioned very good. *S. lindleyana*, a large grower, handsome both in flower and foliage. *S. prunifolia fl. pl.* should be in all gardens; good both for flowers and autumnal foliage. *S. Van Houttei*, very good. *Exochorda grandiflora*, often known as *Spiræa grandiflora*, I have had since 1898, but though it is now a large bush and very healthy, it has not yet made any attempt to flower.

Syringa (Lilacs).—These are indispensable. Some of the newer varieties are good, such as Charles X., rosy lilac; Marie Legraye, white; Souv. de L. Spath, reddish; Mme. Lemoine, double white. These should always be procured on their own roots. Grafted plants seldom live long.

Viburnum Opulus sterilis. — This, the well-known Snowball tree, and *V. Tinus* (*Laurustinus*), are the only two I have grown. Both do well, and I fancy *V. plicatum* and some others would do also. I shall try them.

Vitis Coignetiæ.—I have this growing up the outer branches of a Spanish Chestnut. It does not grow very fast, but is making steady progress. It appears

to be perfectly hardy, and its fine foliage turns to a magnificent colour in autumn.

Veronica.—Several of the shrubby Veronicas do well. *V. Traversii* is the hardiest of all. In the Edinburgh Botanic Gardens there is a good collection of these.

Trees and Shrubs in Edinburgh

Trees and shrubs that will thrive near Edinburgh will do so in almost any exposed city or town similarly situated. Only those that have proved adaptable to this windswept district have been included, an asterisk being placed against the more beautiful and interesting species and varieties that are happy in cold and windy gardens.

Acers.—*A. Pseudo-platanus* is the "Plane" of Scotland. Old trees form features of great beauty. It reaches a height of 60 to 70 feet, often less when isolated. *A. P. var. flavo-marginatum**—The original tree of this variety still remains at Corstorphine, near Edinburgh. It is very effective in spring, but the foliage becomes much duller during summer. *A. P. purpureum. A. campestre* (Common Maple). *A. circinatum**—This is the most beautifully-coloured tree we have in autumn. *A. platanoides** (Norway Maple)—This is to be preferred to either the Sycamore or Common Maple for planting in pleasure-grounds and gardens. *A. dasycarpum.** *A. palmatum**—The varieties of this are excellent although

slow growing. *A. rubrum. A. pictum. A. opulifolium obtusatum**— A bright tree in early spring with its golden-green foliage and flowers. *A. saccharinum* (Sugar Maple). *A. japonicum* and varieties.

ACTINIDIA KOLOMIKTA.—Climber; grows quickly on south wall.

HORSE CHESTNUT (*Æsculus Hippocastanum*) and others: *carnea, Pavia, parviflora, flava.*

AILANTUS GLANDULOSA (Tree of Heaven).

AMELANCHIER VULGARIS and *A. canadensis.**— Very ornamental. Seldom seen, but as free-growing and flowering as the Hawthorn.

ANDROMEDA POLIFOLIA.*—Dwarf height, about one foot. Very beautiful shrub for peat beds.

ARBUTUS ANDRACHNE.—Flowers in February and March.

ARCTOSTAPHYLOS ALPINA.—Plenty of this found in north of Scotland, but somewhat difficult to establish in gardens. *A. Uva-ursi*—Freer in growth than the preceding. Both species are low-creeping shrubs suitable for planting with Heaths in peat.

ARALIA SPINOSA * and *A. chinensis.*

ARISTOLOCHIA SIPHO (Dutchman's Pipe).—Large effective climber.

ARTEMISIA ABROTANUM, *arborescens*, and *tridentata.** —Useful shrubs of grey tone.

AUCUBA JAPONICA and varieties.*

AZARA MICROPHYLLA* and *A. dentata.*

BERBERIS AQUIFOLIUM,* *Darwinii, vulgaris, nepalensis.* Single specimens of *B. Aquifolium*, the Mahonia, become very ornamental with age.

BETULA ALBA* (the Silver Birch).—A very hardy tree, beautiful both in summer and winter. The pendulous variety is the best. Its branches are proof against all winds. No tree is so well adapted for planting close up to houses in the city, for it is very graceful, and obscures little light. *B. utilis, B. papyrifera, B. populifolia.*

BRYANTHUS EMPETRIFORMIS.*—Very fine planted in broad masses. *B. erectus*—Very beautiful in small beds.

BOX* and varieties.

CALYCANTHUS FLORIDUS.—This is excellent on walls.

CAMELLIAS only flower here on walls in the open. They form large bushes in the grounds. *Camellia Thea,* the tea-plant, is also perfectly hardy.

CARMICHÆLIA FLAGELLIFORMIS.*—Very interesting, and flowering with great freedom.

CARPENTERIA CALIFORNICA.*—A splendid plant for south walls, large established specimens having a profusion of large white flowers.

CARPINUS BETULUS* and varieties.

CARYOPTERIS MASTACANTHUS. — A good wall plant.

CASSIOPE FASTIGIATA* and *C. tetragona.**—Both are very choice subjects here and flower well.

CASTANEA SATIVA* (Sweet or Spanish Chestnut).—Ornamental, but does not ripen fruit here.

CEANOTHUS AMERICANUS and *veitchianus.**—Splendid.

CERCIS SILIQUASTRUM* (Judas tree).

CHIMONANTHUS FRAGRANS (Winter-sweet).—Wall.

CHOISYA TERNATA (Mexican Orange Flower).

CISTUS.*—These are very fine, and flower for months if somewhat sheltered.

CLEMATIS.—Of these very charming are *alpina*,* *apiifolia*, *Flammula*,* *heracleæfolia*, *Vitalba*.*

COLLETIA CRUCIATA.

COLUTEA ARBORESCENS and *melanocalyx*.

CONVOLVULUS CNEORUM.*—Very pretty plant for a south wall; silvery foliage and white flowers.

CORNUS (Dogwood).—Of these, *alba* and varieties, *Kousa*, *florida*, *sanguinea* (very ornamental in winter), *Mas* and *m. variegata** (a very choice, variegated shrub), are the best.

CORYLOPSIS PAUCIFLORA and *C. spicata*.—Both do well on a south wall.

CORYLUS AVELLANA and *purpurea*.*—One of the most effective shrubs if used carefully.

COTONEASTERS.—Of these, *buxifolia*, *Simonsii*, *thymifolia*,* *microphylla*,* *horizontalis** (a species with peculiar spreading flat branches, producing a fine effect if grown on sloping banks), are the most noteworthy.

HAWTHORN. — *Cratægus monogyna*, *Oxyacantha*,* also the ordinary white single form, are valuable hardy trees, flowering at the end of June to July.

CYTISUS (Broom).—Of this beautiful family, *albus*,* *Ardoini*,* *biflorus*,* *decumbens*,* *nigricans*, *præcox*,* *purpureus*,* *scoparius* and varieties,* are all splendid growers for dry, sunny situations.

DABŒCIA.—*Polifolia*,* *alba*,* *bicolor*,* the Irish Heaths, are beautiful in small beds and rockeries.

DAPHNE.—Of this delightful family, *blagayana,** *Cneorum,** *var. majus,** *Laureola*, *Mezereum* and varieties.*

DEUTZIA GRACILIS * and *D. scabra.*

ELÆAGNUS ARGENTEA,* *E. multiflora,** and *E. pungens.**

EMPETRUM NIGRUM.*—This plant is useful for mixing with Heaths.

ENKIANTHUS HIMALAICUS.*—The finest species of the genus. Attractive.

HEATHS.—Of these, *E. carnea,** *c. alba,** *ciliaris,** *cinerea,** *Mackaii,** *mediterranea,** *multiflora*, *stricta,** *Tetralix* and varieties,* *vagans* and varieties,* *Watsoni.**

ERIOGONUM UMBELLATUM.—A very fine plant for covering banks.

ESCALLONIA.—Of these, *E. exoniensis,** *macrantha,** *philippiana,** are very valuable, either for walls or as small bushes.

EUCRYPHIA PINNATIFOLIA.*—A very beautiful but slow-growing hardy shrub.

EUONYMUS.—Of this family note should be made of *E. americanus*, *E. europæus*, *E. radicans.** The variegated and other forms of these shrubs are very welcome.

EXOCHORDA GRANDIFLORA (Pearl Bush).

FABIANA IMBRICATA.* — A striking evergreen shrub for a wall.

FAGUS (Beech).—*F. ferruginea* and *sylvatica** and varieties.

FORSYTHIA SUSPENSA* and *F. viridissima.*

FRAXINUS EXCELSIOR* (the Ash), also the Manna Ash (*F. Ornus*).*

FUCHSIA RICCARTONI.*—Flowers for a very long time, and is very hardy.

GENISTA.—Of these, *G. anglica, hispanica, pilosa, sagittalis, tinctoria.*

GLEDITSCHIA TRIACANTHOS.

HAMAMELIS (Witch or Wych Hazel).—*H. arborea,** *japonica,** *virginica.*

HYDRANGEA PANICULATA.* — Magnificent when established.

HYPERICUM.—Of these, *H. Androsæmum, hookerianum, moserianum** (the best of the genus for small beds).

ILEX.—Of the Hollies, *I. Aquifolium* and many varieties, *I. cornuta,** *I. Dahoon,** *I. crenata,** and *I. latifolia** succeed best.

JASMINES.—*J. fruticans* and *J. nudiflorum.** The last-named should be grown as a small bush as well as on walls. Also *J. officinale** and varieties. A golden-leaved form of this species merits attention from its foliage alone.

JUGLANS (Walnut) REGIA.—Grows fairly well, but no fruit of value.

LABURNUM.—Both *L. alpinum* and *L. vulgare.**

LAVENDER.

LEDUM.—Of this family, *L. latifolium** and *L. palustre.**

LEUCOTHOE RECURVA.

LEYCESTERIA FORMOSA.

LIQUIDAMBAR STYRACIFLUA.*

LIRIODENDRON TULIPIFERA (Tulip tree*).—Grows into a very handsome tree.

LONICERA.—Of the Honeysuckles the best are *L. Caprifolium,** *L. fragrantissima, L. Periclymenum,** *L. japonica,** *L. Standishi, L. Xylosteum, L. Ledebourii.*

LUPINUS ARBOREUS * and varieties (Tree Lupine). —Best on walls.

MAGNOLIAS.—Of these, *M. acuminata,** the Cucumber tree, flowers freely. *M. grandiflora** is only for sheltered walls, and *M. Fraseri, M. conspicua, M. stellata, M. Watsoni** for sheltered places.

MORUS NIGRA (Black Mulberry) and *M. alba.*

OLEARIA HAASTII.*—The best August flowering shrub. *O. macrodonta* and *stellulata.**

OSMANTHUS AQUIFOLIUM.*

PERNETTYA MUCRONATA.*—Effective both in flower and berry.

PHILADELPHUS (Mock Orange).—*P. coronarius** and varieties and *microphyllus.*

PHLOMIS FRUTICOSA.

PIERIS FLORIBUNDA.*—Very free flowering. *P. japonica variegata**—Effective.

PLATANUS ACERIFOLIA (Plane).—These appear hardy, but are not popular. They are slower in growth than most trees.

POPULUS (Poplar).—*P. alba, P. balsamifera* (Balsam Poplar), *P. nigra* (Black Poplar), and *P. tremula.*

POTENTILLA FRUTICOSA* (Shrubby Cinquefoil).—Well deserves more attention.

PRUNUS.—Of these, the Cherry and Bird Cherry,* Plum,* Bullace,* and the beautiful *P. triloba* are a success.

PTELEA TRIFOLIATA.

PYRUS.—*P. Aria** (the White Beam tree), *P. Aucuparia** (Mountain Ash), *P. japonica,** *P. rotundifolia,** *P. Sorbus** (Service tree).

QUERCUS (Oak).—The most satisfactory species are *Q. sessilifolia,** and *Q. pedunculata.* These generally thrive well and are amongst the most beautiful of trees for large gardens. In poor soil and windswept places the British Oaks do not grow more than about 40 feet in height, but develop into picturesque features. Their foliage here is of a pleasing green when that of the Beech and Sycamore is past its best. Very few acorns are produced. *Q. Cerris,** the Turkey Oak, and its variety *laciniata,** and *Q. lucombeana,** are also beautiful trees. We must also mention the Evergreen Oak (*Q. Ilex*),* *alba, palustris, laurifolia, coccinea* (Scarlet Oak), *Suber* (Cork Oak), *conferta.*

RHODODENDRON.—Of the Rhododendrons the following are satisfactory: *R. altaclerense, Anthopogon, arborescens, arboreum Campbelliæ, azaleoides, blandyanum, calendulaceum, campanulatum, campylocarpum, catawbiense, caucasicum,* ciliatum, cinnabarinum,* ferrugineum,* fulgens, glaucum,* hirsutum** and varieties, *indicum balsaminæflorum, lancifolium, lepidotum,* myrtifolium,* nobleanum,* n. album,* ponticum** (many varieties), *præcox,* punctatum, racemosum, Rhodora, sinensis** (*azalea mollis*), *Vaseyi,* Wilsoni.* These are the principal

Rhododendrons that thrive and flower well here. No other shrubs give such a long and varied flower display.

RIBES.—*R. alpinum, aureum,* and *rubrum. R. sanguinea** and its varieties are the principal ornamental currants.

ROBINIA PSEUDACACIA.*—An elegant foliage tree, and usually the last to break into leaf.

ROSA.—Practically all the Tea and Hybrid Perpetual Roses can be grown, if sheltered spots are chosen and the plants grown as dwarfs. However, the stronger varieties are the most satisfactory ones, and in bad seasons it is July before they commence to flower, although September has well advanced before they cease. The hybrid Sweet Briars are the freest of all to grow. Groups form thickets of foliage which are almost hidden with blossom. *Rosa wichuriana* covers banks, or anything somewhat flat, in a very short time. It flowers through September, and attracts great attention. Such tender Roses as Maréchal Niel, Niphetos, and Banksian are useless.

ROSMARINUS OFFICINALIS (Rosemary).

RUBUS.—Of these, *R. arcticus,* dwarf; *R. lacinatus,** *R. nutkanus.** *R. deliciosus** is a beautiful shrub, and should be left alone after planting.

RUSCUS (Butcher's Broom).—*R. aculeatus* and *R. Hypoglossum.*

SALIX (Willow).—*S. alba, babylonica* (Babylonian Willow), and *pendula,* a lovely tree. *S. Caprea** (Goat Willow), *fragilis, herbacea* (the Alpine Willow, not

much larger than the Wild Thyme), *Lapponum, nigra, Paulinæ, reticulata, rubra, viminalis.*

SKIMMIA FORTUNEI and *S. japonica.**

SAMBUCUS (Elder).—*S. canadensis, nigra, racemosus.*

SPIRÆAS.—Of these, *S. bella, bullata, canescens, decumbens, cantoniensis,* discolor,* japonica, var. Bumalda,* tomentosa, var. alba.*

STAPHYLEA COLCHICA.

SYMPHORICARPUS RACEMOSUS (Snowberry).

SYRINGA (Lilac).—*S. persica** (Persian Lilac), and *S. vulgaris** and varieties.

TAMARIX.—*T. gallica, T. hispida,* and *T. odessana,** a very fine August flowering shrub.

TILIA (Lime).—*T. argentea, T. cordata, T. platyphyllos,* and *T. vulgaris,** the best of all.

ULEX (Furze).—*U. europæus* and *var. fl. pl.**

ULMUS (Elm).—*U. campestris** and *U. montana.**

VACCINIUMS.—Of these choose *V. arboreum, V. corymbosum, V. Myrtillus,* and *V. pennsylvanicum,** very fine for drooping over rocks in rock garden; *V. Vitis-idæa* and the variety *variegata,* a pretty variety of this native shrub.

VERONICA.—Of these the most satisfactory are *V. amplexicaulis,* Armstrongii,* buxifolia,* chathamica,* Colensoi,* cupressoides,* c. variabilis**—grown in poor soil and well exposed, this variety of *V. cupressoides* is very fine both in summer and winter—*decumbens,* epacridea,* glauco-cærulea,* Hectori,* Kirkii,* ligustrifolia,* monticola,* pimeleoides,* pinguifolia,* rakaiensis,* salicifolia,* Traversii.** The above are hardy Veronicas. They also happily include many of the best. Other

GUELDER ROSE OR SNOWBALL TREE.

WYCH ELMS BY HEDGEROW.

species are good plants out of doors during summer; they are, however, best lifted early in October and housed till May, or they may be covered in severe weather. Cold winds do most mischief.

VIBURNUM OPULUS (Guelder Rose) and varieties, *V. O. sterilis*,* and *V. tomentosum plicatum*.*

VITIS (Vines).—Of these the best are *V. Coignetiæ*,* *V. heterophylla*,* *V. Labrusca*,* and *V. riparia*.*

VINCA (Periwinkle).—*V. major* * and *V. minor* * and varieties.

YUCCA.— *Y. acutifolia*, *Y. filamentosa*,* and *Y. gloriosa*.*

BAMBOOS.—These require sheltered positions and good deep soil. The following have proved to be the best out of a considerable number: *Arundinaria auricoma*,* *Fortunei*,* *var. variegata*,* *falcata*,* *Hindsii*,* *japonica*,* *nitida*,* *pumila*,* *Veitchii*,* *Simoni variegata*,* *Bambusa palmata*,* *B. tessellata*,* *Phyllostachys aurea*,* *bambusoides*,* *boryana*,* *flexuosa*,* *mitis*,* *nigra*,* *Quiloi*,* *viridi-glaucescens*.*

CONIFERS.—These are only useful when young—at least, the majority of them. It is impossible to keep them symmetrical against strong cold winds, and the deposits of soot upon their foliage are injurious.

When Conifers are wished for as large trees, the Cedar of Lebanon, Atlantic Cedar, *Pinus sylvestris*, *Pinus Pinaster*, or *Cupressus lawsoniana* are suitable.

When Abies and Picea lose their symmetry they are usually far from ornamental. All the species and beautiful varieties of Cupressus, Thuya, and Juniperus

are very valuable in a young state. They should be replaced as they become thin and shabby, as they soon do in exposed places. The most satisfactory tree of all is the Yew. Even this hardy tree has its foliage badly hurt by severe winds, but the damage is soon made good.

TENDER SHRUBS AND TREES IN THE SOUTH-WEST

THE possibilities that exist of the successful open-air culture of tender subjects in the south-west are but little dreamt of by the majority of English flower-lovers. They doubtless read with interest the accounts in the horticultural press of Australian, Chilian, and Californian flowering trees and shrubs growing in their native habitats, and possibly feel a desire to visit these climes in order that they may verify with their own eyes the truth of their readings. As a matter of fact, however, a lengthy sea-voyage is by no means indispensable in order to view certain of these exotics flourishing in the open air, for a few hours' journey by rail will bring the passenger to a land where many of these denizens of other climes may be seen enjoying robust health under English skies.

The following list of tender shrubs and trees growing in the gardens of the south-west cannot claim to be an exhaustive one, since it contains only such as have been personally noticed in good health during rambles along the southern coast-line of Cornwall and Devon, and, where no lengthened inspection is possible, it is obvious that certain species and varieties must be overlooked. Incomplete, however,

as it doubtless is, it should give an idea of the climatic advantages enjoyed by the district in question.

Many of the subjects mentioned are growing in Tresco Abbey gardens, Isles of Scilly, but most of these are also found in mainland gardens as well. Where any have been met with at Tresco only, the fact is noted, but these may also be present on the mainland.

The soil of the Scillies, which is composed apparently of peat and disintegrated granite, and is almost identical with much of that around Penzance, is admirably adapted for hard-wooded Australian, New Zealand, and Chilian shrubs and trees, and almost all the species and genera enumerated would be best suited by a compost in which peat and leaf-mould and granite sand formed the chief proportion, although it must be allowed that some alluded to have been found to succeed equally well in sandy loam. Porosity in the soil is indispensable, for, in this district, where the winter rains are often exceptionally heavy, unless the water percolates rapidly through the ground, stagnant moisture collects around the roots, a condition which is absolutely fatal to success. The advantages of the Cornish granite sand are gradually being appreciated. Mr. Fitzherbert writes, "I was told the other day by an acquaintance that since he had imported it by the truck-load to his Sussex garden he was able to grow many things successfully that he had before failed with."

ABELIA FLORIBUNDA.—Mexico. A beautiful evergreen shrub, bearing clusters of drooping pink flowers about 3 inches in length. Requires a sunny and sheltered site. Finest specimen 6 feet. Several gardens.

ABUTILON VEXILLARIUM.—Rio Grande. A handsome evergreen species generally grown against a wall. It throws up long, slender, arching shoots from 6 to 8 feet in length, studded with pendulous ball-shaped flowers with crimson sepals, yellow petals, and dark-brown stamens which are very striking and often remain in bloom for six months. Common. *A. vitifolium* — Chili. A most ornamental evergreen shrub of which there are two forms, one bearing lavender flowers, the other white. In exceptional cases it attains a height of 20 feet, and when covered with its large blossoms, which are about 3 inches in diameter, and feathered to the ground with foliage, it presents a lovely picture. Large specimens form pyramids of bloom, and in some gardens numbers of these are to be found. Wall protection unnecessary.

ACACIAS.—Australia. In Cornish and South Devon gardens many species are to be met with in robust health. *A. affinis*, very generally confounded with *A. dealbata*, is the most common. In many cases *A. affinis* is grown as *A. dealbata*. The leaves of the former are green, while those of the latter are bluish and its flowers are less bright in colour. A group of *A. affinis* about 35 feet in height was a wonderful sight at Tregothnan at the end of March, being

simply covered with golden blossom which was thrown into high relief by a background of Ilexes. *A. verticillata* is another handsome species flowering later in the spring. It is a very rapid grower, reaching a height of 15 feet in a few years, generally growing in the form of a broad-based cone, with its lower branches but a foot or so from the ground. When in flower it is so covered with its pale-yellow blossoms that no foliage is discernible. *A. armata* may be seen as a bush 7 feet high and as much in diameter. *A. ovata* Mr. Fitzherbert has only seen as a bush some 3 feet high; very pretty when bearing its circular, golden flower-bells. *A. longifolia* is another handsome tree, with leaves something like those of an Oleander and bright-yellow flowers. *A. melanoxylon* is a fine tree. The specimen at Tresco is about 50 feet in height, and there are good examples on the mainland. Pale-yellow flowers produced in profusion. Other species met with are *A. riceana*, *A.* (*Albizzia*) *lophantha*, *A. calamifolia*, *A. linifolia*, *A. latifolia*, and *A. platyptera*, the latter against a wall.

ADENANDRA FRAGRANS.—Cape of Good Hope. A small evergreen shrub, bearing fragrant, rose-coloured flowers. Tregothnan.

ANOPTERUS GLANDULOSA.—Tasmania. A vigorous evergreen shrub, with dark, shining green leaves, bearing long, erect terminal racemes of white, cup-shaped flowers, resembling the blooms of *Clethra arborea*, but larger. Tregothnan.

ARALIA QUINQUEFOLIA. — Garden seedling. A

striking plant with dark-green, large-sized leaves divided into five sections. Height at present 5 feet. Tregothnan.

ASTER (OLEARIA) ARGOPHYLLUS.—Australia. The Silver Musk tree, with musk-scented leaves and dull-red flowers in summer. Three gardens. Height 12 feet.

ATHROTAXIS LAXIFOLIA.—Tasmania. A tender Conifer. A fine example, 20 feet in height, fruited profusely at Menabilly two years ago.

BANKSIA GRANDIS.—Australia. Evergreen shrub, bearing yellow flowers in dense spikes. *B. serrata*, red flowers, and *B. littoralis*. All at Tresco. *B. quercifolia*, handsome leaves, with white reverse. Abbotsbury. Banksias were at one time in request as greenhouse plants.

BAUERA RUBIOIDES.—New South Wales. A pretty little evergreen shrub not unlike a Heath, but more branching, bearing solitary, pink, saucer-shaped flowers half an inch across, each petal striped with white down the centre.

BENTHAMIA (CORNUS) FRAGIFERA.—Nepaul. A strikingly handsome, evergreen tree, first introduced into England in 1825, when seed was sown at Heligan, Cornwall, and where there are now specimens some 60 feet in height. It is largely represented throughout Cornwall, being used in some places as a woodland tree. In June, when the leafage is hidden by the wide-spread, platter-like flowers of pale yellow, its effect is very beautiful, especially when thrown up by a background of green foliage.

In the autumn the fruits, from which it takes its name of Strawberry tree, some an inch or more in diameter, become bright crimson.

BORONIA.—Australia. These are almost universally treated as greenhouse plants, but succeed in the open air in the south-west. At Tregothnan, at the end of March, two bushes of *B. megastigma*, planted in front of a wall, the larger of which was about 3 feet in height, were coming into profuse bloom, and already scented the air with the first of their brown, yellow-lined, drooping cups. *B. heterophylla*, with its purple-red flowers was also expanding blooms, and *B. Drummondii*, *B. elatior*, and *B. polygalæfolia* were also growing in the same garden.

BRACHYGLOTTIS REPANDA. — New Zealand. A handsome tree, with leaves nearly a foot in length and numerous minute flower-heads. Tresco.

BUDDLEIA COLVILLEI.—Sikkim. The finest of the new race, with pendulous racemes, nearly a foot in length, of crimson, pentstemon-like flowers, paler round the centre, an inch across. Leaves large and dark green, 6 inches or more in length. Several gardens.

CALLISTEMON SALIGNUS.—Australia. There are two forms of this Bottle-brush, one bearing pale-yellow flowers and the other crimson. Others are *C. lanceolatus*, carmine-flowered, and *C. speciosus*, scarlet-flowered. These grow well as bushes, specimens of the first-named being sometimes 10 feet in height and as much in diameter. There is much con-

fusion between this genus and *Metrosideros floribunda*. Callistemons are to be found in many gardens.

CANDOLLEA TETRANDRA.—Australia. An evergreen bush bearing clear-yellow, cup-shaped flowers somewhat resembling Sun Roses, but of finer texture. Tresco.

CAMELLIA RETICULATA.—This is hardy, but rarely flowers satisfactorily in the open except in the south-west, where it is grown both against walls and as a bush plant. It is by far the finest of the Camellias, bearing lovely, pink, semi-double flowers 6 inches in diameter, with bright-yellow, spreading stamens.

CANTUA BUXIFOLIA.—Peru. An evergreen shrub, bearing in corymbs at the end of the branches pale-red trumpet-flowers something after the style of *Fuchsia corymbiflora*. Tresco.

CARPENTERIA CALIFORNICA.—A well-known evergreen shrub in the south-west, bearing fragrant, white, yellow-centred flowers. In some gardens it suffers from browning of the leaves, but this is apparently not the effect of cold winds or frost, as often the most exposed plants are the least affected and the most sheltered are in the worst plight. The finest specimen known to Mr. Fitzherbert is about 8 feet high and as much through ; it is growing near Teignmouth. It may be considered fairly hardy since it has been grown in the open in Scotland.

CARYOPTERIS MASTACANTHUS. — Chili. A most valuable, much-branched evergreen shrub growing to a height of 4 feet or more, bearing lavender-blue clusters of flowers in October. There is also a white

form. The type is common. This is also happy farther north.

CASSINIA LEPTOPHYLLA.—New Zealand. A small evergreen shrub, bearing white flower-heads. Tregothnan.

CEANOTHUS. — California and Mexico. Many species and varieties are grown both as bushes, in which form they soon make small trees, and trained against walls. Of the early-flowering varieties *C. veitchianus* is the brightest coloured, and of the autumn-blooming, azureus section, Gloire de Versailles is the favourite. Common in most gardens.

CITHAREXYLOM QUADRANGULARE.—West Indies. The Fiddle-wood. Bears white, fragrant flowers. There is a fine specimen at Abbotsbury. Dorset.

CITRUS TRIFOLIATA (ŒGLE SEPIARIA). — Japan. This fiercely-spined Citrus is hardy, but rarely flowers and fruits in the north. In the south-west it flowers freely, and one specimen fruits almost annually. It is 7 feet in height, and last year carried over thirty fruits.

CLERODENDRON TRICHOTOMUM.—Japan. A deciduous shrub, also hardy, but flowering best in the south-west. A fine specimen over 15 feet in height and as much through is at Greenway on the Dart.

CLETHRA ARBOREA.—Madeira. The Lily-of-the-Valley tree. Evergreen. It bears panicles of white, bell-shaped flowers in the summer, at which time it is quite a feature at Tresco. There are good bushes, the largest about 7 feet in height, at Trewidden, near Penzance.

COROKIA BUDDLEIOIDES.—New Zealand. A tall-growing evergreen shrub, with leaves 2 to 6 inches in length. *C. Cotoneaster* is a spreading shrub with small leaves. Both species bear yellow, sweet-scented flowers. The first was at Ludgvan Rectory, Cornwall, the second at Bishop's Teignton. South Devon.

CORREA.—Australia. Greenhouse evergreen shrubs which do well at Tresco, and also in some gardens on the mainland. *C. cardinalis* is the most brilliant, but *C. ventricosa* is almost as highly coloured. The two named, as well as *C. alba*, *C. bicolor*, *C. carnea*, *C. glauca*, *C. magnifica*, and *C. virens* are sometimes seen in good health and flower on the mainland.

CORYNOCARPUS LÆVIGATUS.—New Zealand. An evergreen tree, bearing panicles of white flowers followed by plum-like fruit. A healthy young plant is at Ludgvan Rectory.

CRINODENDRON HOOKERI (TRICUSPIDARIA HEXAPETALA).—Chili. A particularly handsome shrub, growing to a height of 5 feet, bearing large, drooping, cherry-red, urn-shaped flowers on long peduncles, the petals being very fine in texture. In many gardens.

CYTISUS RACEMOSUS.—Peak of Teneriffe. One of the commonest and most popular greenhouse plants. It grows to 8 or 10 feet in height in the south-west and often flowers until Christmas.

DAPHNE INDICA.—India. Both the white and purple-red form of this fragrant plant are common in the open in Devon and Cornwall, and in mild

seasons commence to bloom in January. Some old plants have formed large bushes in front of walls.

DAPHNIPHYLLUM GLAUCESCENS. — China. Evergreen. This is hardy, but is uncommon. A very large specimen is at Trewidden, and is 12 feet in height and 20 feet in spread. It has long shining leaves, the shoots being red in colour; these, early in April, are surrounded by closely clustered, maroon-red flower-buds.

DATURA SANGUINEA.—Peru. This grows to a large size in the south-west, often forming a tree 12 feet or more in height, and, in mild winters, blooming until February. *D. suaveolens*, Mexico, is probably more tender, as such large specimens are rarely seen.

DENDROMECON RIGIDUS.—California. A handsome shrub with glaucous leaves, the branchlets terminated by bright-yellow poppy-like flowers. It succeeds best in poor soil that does not induce vigorous growth. Enys.

DESFONTAINEA SPINOSA.—Chili. A most distinct evergreen shrub, with leaves resembling those of a Holly. It bears tubular flowers 3 inches in length of a bright vermilion tipped with yellow, and is a very handsome object when in full flower. It commences to bloom in the summer, and often holds many of its flowers until November. The largest specimen met with was about 8 feet in height, and was in the neighbourhood of Teignmouth. The Desfontainea is to be found in most gardens.

DIOSMA ERICOIDES.—South Africa. A heath-like

evergreen shrub, bearing single white flowers not unlike those of a Myrtle. Its leaves are fragrant when bruised. A healthy plant, about 4 ft. by 4 ft., trained against a wall, was coming into bloom at Tregothnan at the end of March.

DIOSPYROS KAKI.—The Persimmon. China. This is hardy, but rarely fruits except in the south-west. A tree at Bishop's Teignton produced fruit, which ripened well, in 1890. In autumn the colouring of its foliage is very attractive.

DRIMYS (TASMANNIA) AROMATICA.—Tasmania. An evergreen shrub or small tree, bearing tiny white flowers in spring. Its leaves, if bitten, are very pungent, stinging the palate like pepper. The finest specimen known to the writer is one 15 feet in height at Menabilly. *D. Winteri*—South America. A handsome flowering shrub, bearing ivory-yellow, fragrant flowers, an inch across. At Bishop's Teignton there is a good example over 12 feet in height. Both species are fairly well distributed in gardens.

DRYOBALANOPS AROMATICA.—Sumatra. The Camphor tree. There is at Penjerrick a good specimen 20 feet in height.

EDWARDSIA GRANDIFLORA SYN. SOPHORA TETRAPTERA.—The New Zealand Laburnum. This and its variety *E. microphylla* bear racemes of yellow flowers, the individual blooms being 2 inches long in the first case, and about half the length in the second, in the spring. Examples 10 feet or so in height are to be found in some gardens.

EMBOTHRIUM COCCINEUM.—South America. The Fire Bush. The most brilliant of all flowering trees capable of out-door culture in this country. In May every twig is laden with clusters of long flowers of glowing scarlet, the trees presenting a most gorgeous spectacle. Every good garden in Cornwall and most in South Devon possesses specimens, some containing a dozen or more. The finest are probably Trewidden and Penjerrick, where they are 30 feet in height and as much in spread.

ERIOSTEMON BUXIFOLIUS.—Australia. A small evergreen shrub, bearing pink flowers in the spring. Tresco.

ESCALLONIA ILLINATA.—Chili. Bears white flowers in July. There is one 15 feet high at Menabilly. *E. revoluta*—Chili. Bears white flowers three quarters of an inch long in August, 20 feet high. Menabilly. *E. organensis*—Organ Mountains. Bears rose-coloured flowers. Fine specimens in more than one garden. *E. floribunda*—Montevideo. Bears fragrant white flowers in August. Common in the south-west.

EUCALYPTI. — Australia. Some thirty or forty specimens are grown, of which perhaps the best known are: *E. globulus*, which has attained a height of 50 feet; *E. citriodora*, 20 feet, against the house at Tregothnan; *E. amygdalina*, &c. Many flower freely and bear fertile seed. *E. Gunnii* flowers freely at Parkstone, Dorset, in Professor Wallace's garden. It is quite hardy there.

EUCRYPHIA PINNATIFOLIA.—Chili. A beautiful

EDWARDSIA GRANDIFLORA.

FABIANA IMBRICATA IN FLOWER IN A DEVONSHIRE GARDEN.

deciduous flowering shrub, bearing large white flowers like a St. John's Wort, with bright-yellow anthers. A specimen at Trewidden is 8 feet in height.

EUONYMUS FIMBRIATUS.—Japan and India. This shrub is chiefly remarkable for the tint of its young leafage, which is bright crimson, and gives a vivid, flower-like effect at a little distance in April. Met with at Tregothnan and Abbotsbury.

EUPATORIUM WEINMANNIANUM.—South America. This soon grows into a rounded bush 10 feet or so in height and as much in diameter. It bears its flat heads of fragrant white flowers in autumn and well into winter, the flowers being succeeded by fluffy seed-vessels. It is quite common.

EURYA LATIFOLIA.—Japan. Half-hardy. An evergreen shrub, with leaves somewhat like those of a Camellia, bearing small white flowers. There is a variegated form that at one time was used for greenhouse decoration. Tresco.

FABIANA IMBRICATA.—Chili. A charming evergreen heath-like shrub, bearing a profusion of pure-white tubular flowers clustered thickly around every shoot. A fine example 8 feet in height is at Trelissick, but it is a common plant in the south-west.

FAGUS CLIFFORTIOIDES.—The New Zealand Beech. A tree with minute leaves, which have given it the name of Birch in its native land. In New Zealand it is evergreen, but in this country is deciduous. A good specimen is at Enys.

FREMONTIA CALIFORNICA.—An extremely handsome deciduous flowering shrub, bearing bright-yellow,

cupped flowers 3 inches in diameter with orange stamens. It often remains in bloom for months. Large plants have unfortunately a way of dying off when apparently in good health, several fine specimens having succumbed in this manner. The finest we now know of is one growing in bush form about 8 feet in height at Newton Abbot, but the same garden contained at one time a larger example.

GREVILLEA. — Australia. *G. rosmarinifolia*, with carmine-red flowers, forms a vigorous shrub, growing to a height of 8 feet with a spread of 7 feet. It is to be found in many gardens. At Tregothnan, *G. Priessii*, with pink and yellow flowers; *G. alpina*, red-tipped yellow; and *G. sulphurea* are grown; and we have seen *G. robusta*, which had been in the open for three years. All species are evergreen.

GUEVINA AVELLANA.—Chili. A very ornamental evergreen tree, with large impari-pinnate leaves of a deep, glossy green, bearing white flowers followed by coral-red fruit the size of a cherry. There is a fine specimen at Greenway, 20 feet in height, which has ripened fruits from which seedlings have been raised.

HABROTHAMNUS CORYMBOSUS. — Mexico. This well-known red-flowered greenhouse shrub does admirably as a bush plant in the open, as does *H. elegans*, with purple-red flowers. They often carry bloom as late as November and are frequently met with.

HAKEA LAURINA.—Australia. An evergreen shrub, bearing clusters of rosy-lilac flowers. Menabilly.

Mr. Fitzherbert says, "I am not aware if it has flowered in this country."

HELIOCARPUS CYANEUS.—Tropical America. A small evergreen tree, bearing blue flowers. Tresco.

HOHERIA POPULNEA.—New Zealand. The Houhere of the natives. Ribbon-wood. With pure white flowers and a handsome foliage. Enys and other gardens.

ILLICIUM ANISATUM.—Japan. A half-hardy evergreen shrub, bearing clusters of ivory-white flowers. Held sacred by the Japanese, who burn the bark before the shrines of their deities. Tresco. *I. floridanum*, Southern States of America, bearing maroon flowers. Not uncommon.

INDIGOFERA GERARDIANA.—India. A low-branching evergreen shrub, with finely-divided foliage, bearing racemes 5 inches in length of rose-purple, pea-like flowers. Common. There is a white variety which is rarely seen.

JACARANDA MIMOSÆFOLIA.—Brazil. A very graceful evergreen tree with acacia-like leaves a foot in length, bearing panicles of drooping violet-blue flowers. There is a fine young plant at Rosehill, Falmouth.

LAGERSTROEMIA INDICA.—A handsome deciduous shrub, bearing large bright-pink flowers.

LEPTOSPERMUM.—Australia. *L. baccatum* and *L. scoparium* are the most generally met with. Both bear small white flowers and are evergreen. We have seen the former 12 feet and the latter 20 feet in height. Other species are also grown.

LIBONIA FLORIBUNDA.—Brazil. The favourite

greenhouse flowering shrub, bearing drooping scarlet and yellow blossoms. Tresco and one mainland garden.

LITSEA GENICULATA.—Southern United States. A deciduous shrub or tree, bearing white flowers in May. The largest in England is probably one at Menabilly, 25 feet in height.

MELALEUCA HYPERICIFOLIA.—Australia. An evergreen shrub, bearing scarlet bottle-brush flowers. Tresco.

MELIA AZEDARACH.—Tropical Asia. The Bead tree, so called from the seeds being used for rosaries, bearing much-branched panicles of fragrant lilac flowers. Leaves bipinnate and deeply serrated. Rosehill. Evergreen.

MELIANTHUS MAJOR.—Cape of Good Hope. A well-known plant in sub-tropical gardening. At Rosehill it has reached a height of 12 feet.

METROSIDEROS ROBUSTA.—New Zealand. An evergreen tree, bearing clusters of brilliant crimson flowers at the extremities of the shoots; in this it differs from Callistemon, whose flowers encircle the branchlets some distance below the extremities. Tresco; 30 feet in height.

MITRARIA COCCINEA.—Chili. An evergreen shrub, bearing bright-scarlet flowers. This is to be found 6 feet in some gardens.

MYOPORUM LÆTUM.—Australia. Native name, Guaio. An evergreen tree, bearing small white flowers, and having lanceolate leaves dotted with countless transparent spots. Two mainland gardens.

NERIUM OLEANDER.—Mediterranean. The Oleander. This is established, and flowers in sheltered nooks on the mainland.

OZOTHAMNUS ROSMARINIFOLIUS.—Australia. An evergreen shrub, bearing countless, minute, white flowers. Sprays, if cut when the flowers are fully expanded, will retain their decorative qualities for a year. It is common in the south-west, and at Trewidden there are bushes 8 feet in height.

PAULOWNIA IMPERIALIS.—Japan. A hardy deciduous flowering tree, bearing erect panicles of large, lilac, gloxinia-like flowers. Owing to the spring frosts, it rarely perfects these except in sheltered sites in mild springs, but when in good bloom it is marvellously beautiful.

PENTSTEMON CORDIFOLIUS.—California. A tall-growing species, bearing bright-scarlet flowers in the summer. With the shelter of a wall it grows to a height of 5 feet or more. Trewidden.

PHILESIA BUXIFOLIA.—Chili. A dwarf evergreen shrub, rarely exceeding 2 feet in height, bearing drooping, pink lapageria-like blossoms. To be found in many gardens.

PHOTINIA JAPONICA.—Japan. The Loquat. This hardy, ornamental-foliaged tree is practically hardy. and at Enys flowers annually. We believe, however, that it has not fruited. The finest specimen we know of, 15 feet in height with a head 12 feet through, is at Saltram.

PIERIS FORMOSA.—Himalayas. This so-called Andromeda is widely met with. The finest example

is at Pentillie Castle, and is 20 feet in height with a spread of 30 feet. When this is white with its clustering flower-sprays it is a lovely sight.

PIMELEA DECUSSATA. — Australia. An evergreen shrub, bearing rose-red, globular flower-heads at the extremities of the branches. Tresco.

PINUS MONTEZUMÆ.—Mexico. A noble and distinct Pine, good specimens of which are at Tregothnan and Menabilly, where it has fruited.

PIPTANTHUS NEPALENSIS.—Nepaul. An evergreen shrub, bearing numbers of bright-yellow laburnum-like flowers. It seems indifferent to soil, and may be seen flourishing under adverse circumstances. Common.

PLAGIANTHUS BETULINUS.—New Zealand. Ribbon tree. Bears small white flowers in clusters. A splendid example 50 feet in height is at Abbotsbury.

PITTOSPORUM.—New Zealand. Evergreen shrubs. *P. Mayi*, at Tregothnan, is about 30 feet in height; while we have seen *P. bicolor* over 20 feet, and many fine examples of *P. undulatum*, *P. tenuifolium*, of which last a hedge has been made at Falmouth, and other species. All bear their little flowers in profusion in the south-west. The Japanese *P. Tobira* is a hardy shrub, bearing spreading flower-heads of fragrant white blossom.

PODOCARPUS ANDINA.—Chili. A handsome evergreen tree to be found in most gardens. At Penjerrick there is a specimen 40 feet in height.

POINCIANA (CÆSALPINA) GILLIESI.—South America.

PINUS MONTEZUMÆ AT FOTA.

An evergreen shrub with acacia-like foliage, bearing clusters of large yellow flowers with bright-red stamens. Mr. Fitzherbert says, "The finest specimen I have seen was in the late Rev. H. Ewbank's garden at Ryde, but I know of smaller ones in the south-west."

POLYGALA GRANDIFOLIA (syns. *grandis*, &c.).—Bahia. An evergreen flowering shrub, the finest of its race, bearing large rose and white flowers. Tregothnan.

PSEUDOPANAX CRASSIFOLIUM.—New Zealand. An evergreen shrub with dark-green thick leaves 2 feet in length, with orange midribs. Ludgvan Rectory.

PUNICA GRANATUM.—The Pomegranate is a neglected shrub in English gardens. Planted at the foot of a south wall, and treated generally like a well-groomed Peach tree, it will flower from June to September. It is not a shrub for cold climates, but Mr. Watson, writing in the *Garden*, October 26, p. 283, says, "At Kew three varieties are grown outdoors, namely, the type, the big double-white flowered variety, with petals margined with white, Picotee-like, and the dwarf variety known as Nana. There are other forms beside these, including a white-flowered one which I have seen in Paris gardens, where old—very old—standard plants are grown and treasured. The dwarf variety is cultivated as a pot plant in some continental countries. I have seen it in the Hamburg florists' shops, pretty little pyramids in 5-inch pots, covered with flowers.

Fruits are rarely produced by the Pomegranate in England."

RHAPITHAMNUS CYANOCARPUS.—Chili. An evergreen tree, bearing pale-blue flowers, followed by violet-blue berries. A fine specimen 20 feet in height is at Menabilly.

RUBUS AUSTRALIS.—A Bramble, the only form of which is worth growing, and that merely as a curiosity, is a practically leafless one. The leaves are indeed there, but they consist merely of three midribs armed with curved spines, and terminated by leaflets less than an inch in length of an inch in breadth. A large plant at Bishop's Teignton has smothered a Euonymous bush, and climbed into an adjacent Fir.

SENECIO.—Many of the newer evergreen exotic species, such as *S. Grayii*, *S. Fosterii*, *S. Heretieri*, and others are grown, while in Rosehill garden is a fifty-year-old plant of the Mexican *S. Petasitis*, 8 feet in height.

SOLANUM CRISPUM.—Chili. An evergreen flowering shrub, bearing lavender yellow-centred flowers in profusion, often reaching a height of 8 feet. Quite common.

SPARMANNIA AFRICANA.—Cape of Good Hope. African Hemp. An evergreen shrub, bearing masses of white flowers with ruby-tipped anthers; a well-known greenhouse plant. At Tresco both the single and double forms are grown, and attain a height of 10 feet. The single form is also met with in mainland gardens, where it is often in flower in February.

VERONICA HULKEANA.—New Zealand. An evergreen shrub, bearing branching panicles of pale-lilac flowers, doing best with the support and protection of a wall. To be found in many gardens.

WESTRINGIA TRIPHYLLA.—Australia. Evergreen shrub, bearing blue flowers in summer. Tregothnan.

TENDER WALL PLANTS IN THE SOUTH-WEST

THE notes on tender shrubs and trees grown in the south-west are fittingly supplemented by a passing reference to plants used for covering walls, mostly of climbing habit, but a few of shrubby growth.

BIGNONIA.—*B.* (*Tecoma*) *radicans* is a hardy climber, and *B. capreolata* may also be considered so. Other members of the family grown in the open are *B. capensis*, Cape of Good Hope, orange; *B. Cherere*, Guiana, orange scarlet; and *B. speciosa*, Uruguay, pink. Greenway on the Dart.

BERBERIDOPSIS CORALLINA. — Chili. Drooping crimson flowers borne in racemes in the autumn. This evergreen plant does best in peat or leaf-mould in a partially shaded position. Common.

BOUGAINVILLEA GLABRA.—Brazil. This climber cannot be considered a success in the open in the south-west, but in two gardens it has been grown and flowers, but in neither case has it exhibited a tithe of the freedom of growth displayed by it under glass.

BUCKLANDIA POPULNEA.—Himalayas. A handsome evergreen foliage plant, said to grow to a height

of 100 feet in its native habitat. Its large heart-shaped leaves are tinted with bronze and maroon. Tregothnan.

CALLICARPA PURPUREA.—India. An evergreen shrub bearing small inconspicuous flowers, followed by violet-coloured berries. Trewidden, Penzance.

CASSIA CORYMBOSA.—Buenos Ayres. A rambling shrub, almost invariably grown against a wall, though it has been met with planted against a wire fence, and spreading out on either side. In August it is a mass of golden-yellow bloom, some of which it often retains until Christmas. With wall protection it reaches a height of 12 feet or more, and when in flower is a striking object in the garden. It is fairly common in the south-west.

CHORIZEMA.—Australia. Well-known evergreen greenhouse plants, bearing pea-like flowers of orange and red. Masses 7 feet in height and more in breadth grow against the walls at Trewidden, and begin to flower in March. *C. cordatum* and *C. Lowii* are the species generally grown.

CISSUS DISCOLOR.—Java. A climber, bearing greenish-yellow blossoms.

CLEMATIS INDIVISA LOBATA.—New Zealand. This beautiful white-flowered Clematis grows well in many gardens, and commences to bloom in March.

CLIANTHUS PUNICEUS.—New Zealand. A brilliant-flowered evergreen climber, bearing large flowers, somewhat resembling lobsters' claws, scarlet crimson in hue. It sometimes comes into flower as early as Christmas, the number of its blossoms increasing

until mid-May, when it is a glowing sheet of colour. The finest plant Mr. Fitzherbert knows is at Stoke Fleming, near Dartmouth, where it covers the side of a large house.

DIPLACUS (MIMULUS) GLUTINOSUS.—California. Another popular greenhouse plant, bearing buff flowers, which succeeds admirably against walls in many gardens, growing some 5 feet in height.

ELÆOCARPUS CYANEUS.—Australia. An evergreen plant of shrubby growth, bearing whitish-blue flowers. Greenway.

ERCILLA (BRIDGESIA) SPICATA.—Chili. A self-clinging evergreen climber, bearing inconspicuous flowers. Fairly common, but scarcely attractive.

HIBBERTIA DENTATA.—Australia. An evergreen climber, with foliage of deep bronze, bearing single bright-yellow flowers in April. Trewidden. *H. Reidii*, also yellow-flowered. Tregothnan.

HYDRANGEA SCANDENS.—Japan. A rampant-growing climber, bearing flat flower-heads, composed of blooms the minority of which are sterile. It clings naturally, and is displayed to best advantage when allowed to ascend a bare tree trunk. At Menabilly, Cornwall, a specimen planted twelve years ago has ascended the columnar trunk of a Turkey Oak to a height of almost 40 feet.

INGA PULCHERRIMA.—Mexico. An evergreen shrub, bearing bright-scarlet flowers in summer. A fine plant covering a large expanse of wall is at Greenway.

KENNEDYA NIGRICANS.—Australia. An evergreen

climber, bearing violet-purple racemes of small pea-like blossoms. Greenway. *K. alba* is also grown.

LAPAGERIA.—Chili. This handsome evergreen climber, producing long wax-like blossoms of white and rose, is well known under glass. In the south-west it does well in the open against a north wall, in peaty compost, often bearing its flowers as late as Christmas.

LASIANDRA (PLEROMA. TIBOUCHINA) MACRANTHA. —Brazil. A beautiful evergreen shrub of climbing habit, bearing large violet flowers. It is usually cut down by frost, but breaks again strongly in the spring. Trewidden and other gardens.

MANDEVILLA SUAVEOLENS.—Buenos Ayres. A lovely deciduous climber, bearing large, white, deliciously-fragrant flowers in August. It does well in several gardens in the south-west, in some of which it seeds freely.

MICHELIA (MAGNOLIA) FUSCATA.—China. A deciduous shrub, bearing dull-purple sweetly-scented flowers. Tregothnan.

PHŒNOCOMA PROLIFERA.—Cape of Good Hope. —An evergreen shrub, bearing large, terminal, crimson flower-heads. Trewidden.

PHYSIANTHUS ALBENS SYN. ARAUJIA ALBENS.— Brazil. An evergreen climber, bearing a profusion of white flowers, which later assume a reddish tinge. Common in the south-west. The finest specimen Mr. Fitzherbert has seen grew against a cliff-face in the public gardens at Torquay. It spread to a

height and breadth of considerably over 20 feet, and one year bore over a dozen huge corrugated seed-pods, about the size of a cricket ball, but oval in shape. This strain killed the plant, but a young one has now taken its place.

PLUMBAGO CAPENSIS.—Cape of Good Hope. A climbing evergreen shrub, bearing large heads of pale-blue flowers; a favourite conservatory plant. It is grown in several gardens, and flowers well in the open. A fine example, which has been unprotected for five months, is growing in the same site as the Physianthus alluded to above.

PUERARIA THUNBERGIANA.—Khasia. An evergreen climber, with leaves 5 inches in diameter, bearing blue flowers. Fibre is obtained from the stems and starch from the roots. Tregothnan.

RHODOCHITON VOLUBILE.—Mexico. A climber, bearing blood-red drooping flowers. This plant, in common with Lothospermum and Maurandya, all three of which are perennials, is almost invariably killed by the winter, but is easily raised from seed. Rosehill, Falmouth.

RHYNCHOSPERMUM (TRACHELOSPERMUM) JASMINOIDES.—Shanghai. An evergreen climber, hardy in the south-west, bearing countless starry-white flowers, most delicately perfumed in August. It is to be met with in the majority of gardens, and in one it has covered the house porch.

RUSCUS ANDROGYNUS SYN. SEMELE ANDROGYNA.—Canary Islands. An evergreen climber, valuable for its striking foliage. The leaves, or rather cladodes,

PUERARIA THUNBERGIANA.

are over a foot in length, and are furnished with from twelve to twenty pinnate sections of a glossy green. Penjerrick, Falmouth, where it has borne its inconspicuous greenish-white flowers.

SOLANUM WENDLANDI.—Costa Rica. An evergreen climber, bearing clusters of large lilac-blue flowers, 2½ inches in diameter. The late Rev. H. Ewbank, in whose garden at Ryde the finest specimen we have seen was growing, considered it the best of all the tender climbers amenable to open-air culture in the south-west.

SOLLYA HETEROPHYLLA. — Australia. Bluebell Creeper. An evergreen climber, bearing drooping blue flowers. Tregothnan.

STAUNTONIA (HOLBOELLIA) LATIFOLIA.—Himalayas. An evergreen climber, with oval leathery leaves, bearing in April clusters of greenish-white flowers, delightfully odorous. A very common plant in the south-west.

STREPTOSOLEN JAMESONI.—Columbia. A handsome evergreen shrub, in great request for clothing conservatory pillars, &c. It bears panicles of orange-red flowers, and when in full bloom has a brilliant effect. A plant about 7 feet in height is growing against the house at Trewidden.

SWAINSONIA ALBIFLORA.—Australia. An evergreen leguminous shrub, bearing white pea-like flowers, well known in greenhouses. It is grown in several gardens, and if cut down by sharp frosts breaks strongly again in the spring.

TACSONIA EXONENSIS.—A hybrid between *T. Van*

Volxemii and *T. mollissima.* Bearing bright rosy-pink flowers. Trewidden.

T. MOLLISSIMA.—Quito. A vigorous species, bearing pink flowers, with tubes from 4 to 5 inches in length. Though Quito is on the equator, its height above sea-level being 9600 feet, the temperature is not unduly high. There is a large plant, which has had to be kept within bounds by periodical pruning, at Rosehill.

HARDY BAMBOOS

THANKS to Lord Redesdale (author of "The Bamboo Garden"), and a few other gardening enthusiasts, the Bamboo has been made a beautiful feature of many English gardens. Although a graceful shrubby grass of quite tropical aspect, the majority of species and their varieties are thoroughly hardy, so much so that they have passed safely through the severest winters of the past twenty years. Bamboos and hybrid Water Lilies are responsible for much of the interest taken in good English gardening at the present time. Their introduction has marked a distinct era, and their popularity is widespread, while in the near future we shall regard the Bamboo much as we do the most common of shrubs now planted. *B. Metake* is, of course, an old favourite, and it is surprising that this stately species did not before remind English gardeners of the great possibilities of the Bamboos in the adornment of the pleasure-ground. As Mr. Bean says: "Fifteen or twenty years ago many of the best of the sorts now largely grown were unknown in this country; but apart from their novelty they have other qualities. No evergreens capable of withstanding our winters exceed these shrubby grasses in beauty and grace, in luxuriance of leafage, or in their bright,

fresh, green tints in winter. Very few, indeed, equal them."

Although between forty and fifty species and varieties are now grown, only about twenty need be thought of, because many of them are so much alike that for the garden they may be regarded as synonymous. The family is divided into three groups or genera—*Phyllostachys*, *Arundinaria*, and *Bambusa*—and it is well to thoroughly understand these divisions. We hope those trade growers who still group everything as Bambusa will follow the now accepted classification. The following have proved the most hardy and beautiful in the Bamboo garden at Kew: *Phyllostachys Henonis*, *P. viridi-glaucescens*, *P. flexuosa*, *P. nigra*, *P. boryana*, *P. sulphurea*, *P. Marliacèa*, *P. ruscifolia*, *P. Castillonis*, *Arundinaria nitida*, *A. japonica*, *A. auricoma*, *A. fastuosa*, *A. Simoni*, *A. Fortunei*, *A. anceps*, *A. Hindsii var. graminea*, *Bambusa palmata*, *B. tessellata*, and *B. marmorea*.

In selecting a place for the Bamboo colony, think well of position. Shelter from north and east is essential. Luxuriant leafy stems are only possible when the plants are screened from winds in these quarters; and unless this protection is given the foliage gets brown and withered in March. Cold north and east winds are more harmful than severe frost, and this applies to all the tender evergreens. A moist and rich soil is also important. Without it luxuriant growth is impossible, and a Bamboo that is not leafy, that does not bend its tall, graceful stems to the breeze and make willowy shoots yards high, when it

GROUPING OF YUCCAS, PAMPAS GRASS, AND BAMBOOS, KEW (Winter).

BAMBOO GARDEN AT KEW, WINTER.
(In centre, Bambusa pulmata; left, Phyllostachys Quilioi; right, Bambusa tessellata).

is natural for it so to do, is not beautiful: the garden is more interesting without it. Many of the species spread rapidly by underground stems, and for this reason must never be planted without careful thought. Each plant should tell its own tale, and not suffer partial extinction through a choke-muddle arrangement that makes a bank of leafage perhaps, but in which all individual beauty is hopelessly lost. Some Bamboos, like *Phyllostachys viridi-glaucescens* and *P. Henonis*, need ample space for full development. Transplant always in *late spring*, never in winter and early spring.

With the utmost care Bamboos in the fickle British climate get sadly browned in February and May, the outcome of either a hard winter or keen east winds in spring. The stems are seldom injured, and Mr. Bean says "the underground portion of the plants never is." This scorched look is not beautiful, and is more apparent as the spring meets summer, when the whole plant world is bursting into new life and tinting the landscape with green. Therefore, Bamboos can never be planted so lavishly as Rhododendrons; and we do not desire a Bamboo plague, beautiful though the plants are in foliage and growth, so perhaps the east wind is somewhat of a blessing. Bamboos must have favoured spots. When a single group is desired, then choose some sheltered corner, and the same consideration is necessary when making a Bamboo garden or grove. A beautiful and refreshing feature of many English homes is a ravine of these lovely grasses, and the Bamboo colony at Kew

is accounted one of the most delightful spots in the Royal Gardens.

In the *Garden* of February 1, 1902, pp. 73, 74, is an interesting account of the Bamboos at Kew. As this contains much practical information, it is reproduced: "Kew was one of the first gardens in which hardy Bamboos were grown, and it is to a great extent due to this collection, and the collections of Mr. Freeman Mitford, Messrs. Verten, and a few other pioneers, that the planting of hardy Bamboos has assumed its present proportions. The creation of the Kew Bamboo garden dates back to 1892. Previous to that the cultivation of hardy Bamboos had been practised under great difficulties. The collection contained only a few species, planted in poor soil in an exposed position, and were always unsatisfactory. In addition to Bamboos, there were other monocotyledonous plants in the same plight, hence the happy idea was conceived of forming the present Bamboo garden. This garden is situated on the eastern side of the Rhododendron dell, near the north or Sion Vista end. It was originally a shallow gravel pit, and is peculiarly adapted to the requirements of Bamboos. The depression in the ground and the high bank of the Rhododendron dell give considerable shelter, whilst a wide belt of large forest trees, which surrounds the north, east, and south sides, insures almost complete protection from cold winds. The garden is pear-shaped, and can be entered by three paths on the south-east, west, and north sides. The banks round the sides are terraced,

and held up by large tree roots placed roots outwards, the roots forming numerous bays and corners, each of which is given over to one species. Separated from these bays by a gravel path 9 feet wide is a central bed of about a quarter of an acre. This is filled with large clumps of various species and fine single specimens, arranged in such a way as to open a vista right through the bed here and there or into the centre. These vistas and openings, together with the paths, add greatly to the general effect, the plants and groups being well separated and showing to advantage, while the beauty of the stately upright stems of some and arching plumes of others, lining or bending over and almost meeting across the openings, is at once seen. Intermixed with the Bamboos are Yuccas, Miscanthus, Pampas Grass, and other things, all of which help to give pleasing variety. Between the back of the garden and the belt of trees a screen is formed of *Rosa multiflora*, Spiræas, Rhododendrons, and other shrubs, interspersed with clumps of Pampas Grass, Yuccas, and some of the strongest and hardiest of the Bamboos.

"When first formed, stiff loam to a depth of 3 feet was spread all over the garden, and into this large quantities of decayed leaves were mixed; in this soil the plants have thriven well. A water main runs through the garden, so that copious supplies of water can be given in dry weather with little trouble.

"Altogether some forty-one species and varieties of Bamboos are cultivated. These are composed of

seventeen *Arundinarias*, nine *Bambusas*, and fifteen *Phyllostachys*. The majority belong to China and Japan, one, however, belonging to North America, and one to India. The Indian species, *Arundinaria* (*Thamnocalamus*) *Falconeri*, which does so well in the south-west counties and in Ireland, is the most difficult to manage, and is killed to the ground every winter, while *A. falcata* and *A. nobilis*, which are two of the most common species in the famous Cornish gardens, refuse to thrive.

"The arrangement of the plants has undergone considerable modification since the first planting, owing to natural development and the introduction of more species. This has resulted in the removal of many duplicates which have been used with large Rhododendrons as an undergrowth to the wood adjoining the entrances, thus considerably enhancing the beauty of the place.

"The period of the year at which the garden is at its best extends from the early weeks of July until the cold east winds in February and March, for, although severe frost has little effect on the leaves of many, cold winds from east or north quickly turn them brown. That Bamboos should continue in good condition and practically be at their best through the worst of the winter months is a strong recommendation in their favour, and by leaving, as is done at Kew, the tall dead stems and leaves of *Miscanthus* and the plumes of the Pampas Grass, touches of colour are given to relieve the greenery, and add greatly to the general effect.

"Of groups and single specimens the following are some of the most conspicuous:—

"ARUNDINARIA.—*A. Simoni*, a fine irregular mass, 16 feet high and 50 feet across. *A. nitida*, several fine clumps, 11 feet high and 12 feet across. *A. japonica*, several large clumps, 11 feet high and 20 feet across. *A. Hindsii var. graminea*, 9 feet high by 12 feet in diameter.

"BAMBUSA.—*B. palmata*, 7 feet high and 15 feet across; this is very distinct and handsome, and should be in every collection.

"PHYLLOSTACHYS.—*P. aurea*, 12 feet high by 16 feet through. *P. Henonis*, 15 feet high by 12 feet. *P. Castillonis*, 12 feet high by 10 feet. *P. nigra*, 15 feet high; several fine masses. *P. viridi-glaucescens*, 15 feet high and 6 feet through at the base, the top spreading to 20 feet. There is also a fine specimen of this in another part of the garden.

"Besides these there are many other fine masses.

"Among plants other than Bamboos found in the garden the Yuccas are possibly next in importance. One group is on a bank on the north side having a slope to the south. It is thus exposed to full sun and the plants are happy. In both summer and winter the group forms a delightful picture. The groundwork is composed of the elegant glaucous-leaved *Y. angustifolia*, while here and there a plant of *Y. filamentosa* has crept in. Height is given to the group by dot plants of *Y. gloriosa* and *Y. recurvifolia*, while a plant of *Cotoneaster thymifolia* growing between the roots in front adds a little in the way of variety.

The whole picture is set in an irregular framing of Bamboos and other plants, some of the most conspicuous of which are *Miscanthus sinensis* in front, *Arundinaria japonica*, *A. Hindsii var. graminea*, *Phyllostachys aurea* and *P. Castillonis*, and Pampas Grass at the back and sides.

"A collection of hardy species of Smilax is allowed to ramble at will over the tree roots which form the bays, each species having its own particular place. The species cultivated are *S. aspera* and its varieties, *S. maculata* and *S. mauritanica*, *S. Bona-nox var. hastata*, *S. hispida*, *S. rotundifolia*, and *S. tamnoides*.

"In addition to the plants named, others given places in the garden are Kniphofias, Funkias, *Eremuri*, *Physalis* (grown for winter effect), *Ruscus*, *Asparagus*, &c., the whole forming an interesting collection, and one which must be seen to be fully appreciated.

"The Kew collection is composed of *Arundinaria anceps*, *A. auricoma*, *A. chrysantha*, *A. Falconeri*, *A. Fortunei*, *A. F. compacta*, *A. Hindsii*, *A. H. graminea*, *A. humilis*, *A. japonica*, *A. macrosperma*, *A. m. tecta*, *A. nitida* *A. pumila*, *A. Simoni*, *A. S. variegata*, and *A. Veitchii*. *Bambusa agrestis*, *B. angustifolia*, *B. disticha*, *B. marmorea*, *B. Nagashima*, *B. palmata*, *B. pygmæa*, *B. quadrangularis*, and *B. tessellata*. *Phyllostachys aurea*, *P. bambusoides*, *P. boryana*, *P. Castillonis*, *P. flexuosa*, *P. fulva*, *P. Henonis*, *P. Marliacea*, *P. mitis*, *P. nigra*, *P. n. punctata*, *P. Quilioi*, *P. ruscifolia*, *P. sulphurea*, and *P. viridi-glaucescens*."

THE HEATHS

FEW groups of small flowering shrubs are so charming in the garden as the hardy Heaths. Their usually neat growth, profusion of flowers, and length of time they are in beauty—sometimes three or four months—make them of great garden value. Not more than twelve species can be grown in the open air, but, with one or two exceptions, all are beautiful, as the following complete list suggests: *Erica arborea, E. australis, E. carnea, E. ciliaris, E. cinerea, E. lusitanica* (or *codonodes*), *E. Mackaii, E. mediterranea, E. multiflora, E. scoparia, E. stricta, E. Tetralix*, and *E. vagans.*

When the whole group is grown, one or more species may be had in flower every month in the year, except, perhaps, November. A hybrid between *E. mediterranea* and *E. carnea* (sold under the name of *mediterranea hybrida*) has been seen much of late, and is a very welcome little shrub, flowers appearing in some years even in November. Every year some expand before Christmas, and during January it is the brightest plant in the outdoor garden. *E. carnea* and the white variety follow it; then in a cluster come *E. australis, E. arborea, E. lusitanica* (*codonodes*), *E. mediterranea* and its several varieties, which fill up the months from March to May, and from June onwards we have *E. cinerea, E.*

ciliaris, *E. Mackaii*, *E. scoparia* (the least worthy of the Heaths), *E. stricta*, and *E. Tetralix*. The two allied species, *E. vagans* and *E. multiflora*, carry on the Heath season until October.

The Heaths are happiest in a peaty soil. The great Heath nurseries are all on soil of that nature, but it is not essential. A loamy medium can, by adding leaf-mould and, if necessary, sand, be made to suit all the Heaths, and some, such as *E. cinerea* and *E. mediterranea*, are quite at home on a calcareous soil. Choose positions for them well exposed to the sun, with, if possible, a cool, moist bottom. The ways of planting vary, of course, according to the character of the species and varieties selected. The rather free-growing and taller Heaths, like *lusitanica* and *arborea*, may be planted in informal groups on sloping banks, or more sparsely with a dwarfer species like *E. carnea* as the groundwork. *E. lusitanica* and *E. arborea*, being somewhat tender, are only seen at their best in the south and west, but beautiful effects have been got by planting them in irregular and scattered groups on grassy slopes, The natural grouping of Gorse and Broom suggests a way of using the many beautiful Heaths.

E. mediterranea and its varieties, a beautiful group, and much hardier than the two species just mentioned, have flowers of shades of purple and white. Delightful effects are possible when they are planted in bold, informal groups, especially on sloping banks or ground, their flowers appearing over a period of ten or twelve weeks. Dwarf Heaths, like *E. carnea*,

c. alba, cinerea, &c., may be used as edgings to beds of heathy plants. I am indebted to Mr. Bean for the following excellent notes about the Heaths, and the reason this group has a chapter to itself is to encourage a greater use of shrubs, strangely neglected in English gardens. The beauty of Heath in bloom appeals to poet and painter. Moorlands surfaced with colour, hill upon hill of softened shades fading away in the distance, are pleasant memories—pictures beautiful enough, we should have thought, to tempt the planter of the English garden to reproduce in a small way in the homelands. I hope this chapter will do something to make the beautiful wild Heaths and their varieties welcome in rough, peaty grounds and banks, and the many other places where they would be as happy as on their native moors and hillsides.

The Taller or Tree-like Heaths

Erica arborea.—This is the most remarkable of all the hardy Heaths; it grows to quite a small tree. In the Isle of Wight, and doubtless elsewhere, it has been known to grow 30 feet high, with a trunk 39 inches in circumference. It is found wild in considerable abundance along the Mediterranean coast region between Genoa and Marseilles, the wood being used in the manufacture of the so-called Briar pipes, Briar being a corruption of the French word Bruyère. All the Heaths flower with great freedom but none more so than *E. arborea* and its near ally,

E. lusitanica. The flowers are almost globular and nearly white; they are quite small individually, but produced so abundantly that the plants are smothered with them from March to May. My experience of this species is that it is hardier and thrives altogether better in the London district than *E. lusitanica*, a species for which it is often grown. It ripens seed every year almost, and can thus be readily increased in a natural way. The young wood is densely covered with short dark hairs and the leaves are closely packed in whorls of three.

E. lusitanica (syn. *codonodes*).—Many will not recognise the name *lusitanica* as applied to the well-known *E. codonodes*, but *lusitanica* is really an older designation. This Heath, as its name implies, comes from Portugal; it is also a native of Spain, and is often confounded with *E. arborea.* Briefly, they differ in the following respects: The flowers of *E. lusitanica* are longer and more bell-shaped than the globular ones of *E. arborea;* the foliage of *E. lusitanica* is a rather pale green, and has a rather more plumose look, the individual leaf being longer and more slender; the young wood, although downy, is not so hairy as in *E. arborea.* The remarkable abundance of flowers, a feature of *E. arborea*, is quite as apparent in this species, their colouring is a faintly pink-tinged white. From Messrs. R. Veitch and Sons, of Exeter, who are taking a special interest in these tree Heaths Kew has lately received a form intermediate between *E. arborea* and *E. lusitanica*—probably it is a hybrid. *E. lusitanica* does not apparently grow so large as

E. arborea, but it is recorded to have reached 12 feet in height in Sussex. Farther west, in Dorsetshire, it grows luxuriantly, and is certainly one of the loveliest of evergreens that can be grown even in that favoured county. Seeds afford the best means of propagation.

E. australis.—One of the most beautiful and rare of all the Heaths, but unfortunately it is not so hardy as the majority. In the southern and western counties, however, it will thrive admirably, withstanding 20 degrees of frost without serious injury, provided the winter is not unusually protracted. It is curious that in spite of its beauty it is little known even in Cornwall, Devon, and similar localities, where it would doubtless thrive to perfection. It has been grown at Kew for the last six years, and although the winters during that period have not been very severe, it has stood out all the time, and it flowers regularly and profusely every spring. It can be increased by cuttings put in at the end of July or the beginning or August. *E. australis* is a native of Spain and Portugal; it flowers in April and May, and lasts eight weeks in beauty. The flowers are rich, bright, rosy red, brighter, indeed, than those of any other Heath; they are fragrant, pitcher-shaped, and about a quarter-inch long. The species has been confounded with *E. mediterranea*, which often does duty for it, but it is distinguished by having the flowers produced generally four or eight together in terminal clusters. (Those of *E. mediterranea* appear in the leaf axils.) Those who have gardens in well-sheltered or mild

localities should grow this beautiful Heath. The difficulty at present is to get hold of the right thing. I am glad to know, however, that some trade firms are taking it up. It is said to grow 6 to 8 feet high, but I have not seen plants half as high.

E. mediterranea.—Of all the taller Heaths this is the one, I think, that deserves to be most freely planted in districts no warmer than the London one. The three preceding species, so beautiful when seen at their best, are more comfortable in the southern and western counties. Of sturdier constitution, *E. mediterranea* may be planted in large quantities with a view to producing broad effects. At Kew a group 70 feet across, planted three or four years ago, already makes a striking mass of purple each spring. The habit of remaining for a long time in full beauty, which is so marked a characteristic of the Heaths, is possessed to the full extent by this species. It is beautiful from March to May, and is all the more appreciated because the majority of the trees and shrubs that bloom at this season have yellow, pink, or white flowers. In the typical *E. mediterranea* the flowers are bright rosy red, but there is a charming white-flowered variety (*alba*), another with bluish foliage (*glauca*), and a dwarf one (*nana*). The flowers appear near the ends of the shoots in the axils of the leaves, and are pitcher-shaped. The name *mediterranea* is misleading, for according to Moggridge, the Mediterranean botanist, it is not a native of that region at all; it is rather of Biscayan origin, and is found in Western France and Spain.

On the boggy heaths of Galway and Mayo a form of this species is found ; it is known as *E. mediterranea var. hibernica,* and grows 2 to 5 feet high. The typical *E. mediterranea* was represented in the Syon gardens seventy years ago by a specimen 10 feet high. Do any such noble examples remain in this country now? *E. mediterranea hybrida* has been already alluded to.

E. stricta.—Although not so strikingly beautiful as the Heaths previously mentioned, *E. stricta* is the hardiest of all the taller species. In inclement districts, where a tall Heath is desired, it may be recommended; it grows from 5 to 6 feet high, and is of erect and sturdy growth, with leaves borne in whorls four to six together; they are deep green, and a large mass of plants with their erect plumose branches produces a somewhat unusual effect. *E. stricta,* like so many Heaths, has a long flowering season; it begins to bloom in June, is at its best in July, but three months later flowers may still be gathered. The flowers are pale purple, and produced in terminal clusters. It has been in cultivation since 1765, and is a native of South-Western Europe ; it is occasionally labelled *E. ramulosa.*

E. scoparia.—This species has proved to be the tallest Heath near London, for it has during the last few years grown as high as 9 feet. This gives it a certain distinction, but when regarded as a flower-bearing plant it is, I think, the least worthy of the tribe. The flowers are crowded in the leaf axils in great profusion, but are small and greenish

white ; the growth of the plant is somewhat straggling and uneven, but it has one merit—viz., it is quite hardy. I have seen its stems split by hard frost on more than one occasion during the last twelve years, but no permanent injury has resulted. It flowers in June, and is a native of the mountainous country to the north of the Mediterranean, especially about Mentone.

The Dwarfer Heaths

The dwarf Heaths can be used quite differently from the more tree-like species that have just been described: as a carpeting beneath sparsely-planted shrubs, for furnishing sloping banks, or for growing on the small terraces of the Rock Garden they are equally useful. And of all these dwarf Heaths more can be said in favour of *E. carnea* than of any other species. It is not only absolutely hardy, but it flowers with astonishing freedom at a time of year when flowers are particularly cherished. Its flowering, of course, somewhat depends upon the weather, but frequently one may see its bright rosy bells almost as soon as January comes in. By the end of February the entire plant is a mass of beautiful colour, and for two or three months longer they retain their freshness no matter what weather may occur. So free-flowering is this Heath that its flowers literally cover it. *E. carnea* is one of those plants (and there are many of them) which, although perfectly well known and quite common, are still not used in gardens so freely as they ought to be. The majority

ONE OF THE BEST OF ALL HEATHS (*Erica carnea*).

A GROUPING OF HEATHS (*Erica mediterranea and vars. alba and hybrida*).

of our early-flowering plants bear flowers that are either white or yellow, so that the rosy-red colouring of this Erica makes a welcome change. However freely it might be planted it would never become wearisome or out of place, for its tints, though bright and warm, are not harsh. Statements have been recently published to the effect that *E. carnea* is a British plant. This idea appears to have originated with Bentham, the botanist, who regarded *E. carnea* and *E. mediterranea* as the same species. Following out this idea, he included the plant which has already been alluded to as a form of *E. mediterranea*, which is found in Western Ireland, in his Flora of Britain as a form of *E. carnea*. Possibly he was right from the standpoint of the botanist, but the plant grown in gardens and nurseries as *E. carnea* is quite distinct from *E. mediterranea*. It is usually not more than 6 to 8 inches high, and is a native of the mountains of Central Europe.

E. cinerea (Scotch Heather).—Over almost the whole of these islands, from the Highlands of Scotland to the moors of Devon and Cornwall, this Heath occurs more or less abundantly. During the late summer and early autumn—it flowers from July onwards—it covers miles of Exmoor with bright-purple colouring, being usually associated with one of the dwarf autumn-flowering Gorses (*Ulex Gallii*). In gardens it has produced several forms, the two most brilliantly coloured being *atro-sanguinea* and *atro-purpurea*, but all the forms of this Heath are beautiful in colour, ranging from white

to crimson. *E. carnea* loves the cool pure mountain air, and on hot and sandy soil in the Thames Valley is short-lived. At the same time it thrives admirably in gardens where a moist, cool bottom can be provided and where the air is pure. Altogether it makes an admirable succession to *E. carnea*.

E. ciliaris (Dorset Heath).—Although in smoky and foggy places, such as London, this Heath is not always satisfactory, in the purer air of the surrounding counties it is a delightful shrub. In some of the old oak-bearing country, in Sussex, for instance, it succeeds to perfection. It is a native of Britain, but is, I believe, confined to Cornwall and Dorset in England, and to Galway in Ireland. It has long, slender, prostrate stems, from which spring erect flower-bearing branches; the rich rose-purple flowers are borne in a long raceme, and they are the largest individually of those of all the native Heaths. The leaves are nearly always in threes, and, like all the younger parts of the plant, are covered with hairs and pubescence; it flowers from July onwards.

E. maweana.—This appears to be a fine variety of *E. ciliaris*, with larger leaves and flowers, even richer in colour and of sturdier growth. It was discovered in Portugal some thirty years or so ago by Mr. George Maw, but has not become popular notwithstanding its beauty. It was obtained for the Kew collection from Messrs. Cunningham and Fraser, of Edinburgh, three or four years ago, and certainly promises to be a better grower there than

WHITE SCOTCH HEATHER (*Erica cinerea alba*).

WHITE MEDITERRANEAN HEATH (Erica mediterranea alba).

E. ciliaris. The flowers are rich crimson and in large racemes.

E. Watsoni.—This is a supposed natural hybrid between *E. ciliaris* and *E. Tetralix*, and was first discovered near Truro by Mr. H. C. Watson. It has rosy-crimson flowers produced in a flatter raceme than that of *E. ciliaris.* In this character and in other ways it is intermediate between the parents.

E. Tetralix (the Cross-leaved Heath or Bell Heather).—This beautiful Heath grows on most of the moors and mountain-sides throughout the British Isles, being perhaps the most widely spread of all the true Ericas in this country. It is called the "Cross-leaved Heath" because of the arrangement of the leaves, which are in whorls of four. It is not very distinct in general appearance from *E. ciliaris*, being downy and hairy on its young slender leaves, &c. It differs, however, in the arrangement of the flowers, which are in a terminal umbel. The leaves of *E. ciliaris* are usually in threes at each node, and, of course, its distribution in Britain is much more restricted than that of *E. Tetralix.* There are other minor points of difference that need not be referred to here. The "Cross-leaved Heath" grows 1 to 1½ feet high, and has bright rose-coloured flowers. There is a white-flowered variety (*alba*), and a very pubescent one named *mollis.*

E. Mackaii.—This is so closely allied to *E. Tetralix* that it is regarded merely as a variety by some

authorities. It was first found in Galway in Ireland, between Roundstone Bay and Clifden. It has since proved to be a native also of Spain. It is a charming garden plant flowering from July to September. The leaves have the same right-angled arrangement as those of *E. Tetralix*, but the flower is shorter, broader, and of a paler rose.

E. vagans (Cornish Heath).—This Heath is one of the the most useful of dwarf evergreens, growing vigorously, especially when planted in good soil. I think, however, it flowers better and has more of the typical Heath character when in somewhat poor, sandy soil. In England it is almost or quite confined to Cornwall, but occurs also in Ireland and South-West Europe. It is especially valuable in the garden because it flowers late, beginning in July and keeping on until October. Its flowers are crowded in racemes 4 to 6 inches long, and they are pinkish purple in colour. The plants may be kept neater and more compact by removing the flowering portion of the shoots before growth recommences in the following spring. Left to themselves, especially in soil that is at all rich, the plants are apt to get straggling and unkempt.

E. multiflora.—This belongs to the same type of Heath as *E. vagans*, the Cornish Heath, but differs in its more compact growth and shorter racemes of flowers. Although not so vigorous and showy, it may still be preferred for some situations. It is a neater plant, and its lower branches have not the

same tendency to get sprawling and ungainly as *E. vagans.* In other respects it is much like that species, the leaves being of similar shape and arrangement, and the flowers of a paler purple; the raceme, however, is only 2 inches or so long. *E. multiflora* is not found in Britain, but is a native of the country to the north of the Mediterranean Sea from France to Greece.

E. vulgaris.—This is now classed as *Calluna vulgaris,* but the word Erica is used to include it in this chapter. It is the Common Heath of mountain and moor, is very closely allied to the true Heaths, and has given rise to many varieties. It likes a peaty or sandy soil, and is longer-lived and more profuse flowering under cultivation in poor rather than rich soil. It is very charming when grown in natural masses in the wilder parts of the garden, and its value is all the greater because it flowers when almost all other shrubs are out of bloom, viz., from July to October. Numerous varieties are offered by the trade, amongst which the following are the most noteworthy, either for their beauty or for their distinctness: *Alba* (white), *Alporti* (crimson), *aurea* (golden leaved), *tenuis* (red), *pygmæa,* and *hypnoides* (both dwarf).

Dabœcia polifolia (St. Dabœc's Heath) is a lovely little shrub, a close relative of the Heaths, and found wild in the west of Ireland. It grows a little over 1 foot high, and bears bell-shaped flowers rather abundantly on erect terminal spikes. They are purple or white, and sometimes have both colours

in one flower, and the plants continue to produce them from July or August till the frosts come. It is quite as plentiful as the dwarf Heaths. *Alba* is a white variety. *Mensiesia polifolia* is its former name, and is still found under that title in books.

NATIVE AND OTHER HARDY EVERGREENS

RAMBLING about the country in winter, one becomes more and more impressed with the beauty of our native evergreen trees and shrubs. Six names comprise them all—Yew, Holly, Scotch Fir, Spruce, Juniper, Box, and Ivy. Even of these the Scotch and Spruce Firs (commonly so-called, though the Scotch is a Pine) are doubtful natives, though so long acclimatised that they may be classed with our own. Those who are laying out new grounds on a large scale would do well to plant these grand things in plenty; indeed, in the case of any new planting that is taken in hand, unless the owner has a good knowledge of shrubs and some taste in their choice and disposition, a planting of these alone would save him from many a regrettable mistake, and from the prospect of the usual senseless jumble of mixed shrubbery that has hopelessly spoilt thousands of gardens.

No foreign shrubs can compare with or take the place of our Yews and Hollies. However large a collection of exotics may be in a well-stocked arboretum, a winter walk among them only shows that there is nothing more cheerfully handsome than our Hollies, or more solemnly dignified than our

Yews. On dry, sandy soils no Conifer is better for England than the Scotch Fir ; or for moist, loamy regions and valley bottoms none is better than the Spruce. Exception is sometimes taken to the Spruce ; and when planted in other than the place it likes it is, indeed, a wretched object, as on dry and hilly grounds. But a mass of Common Spruce in a cool, alluvial bottom is a picture of well-being, and no one can deny their majesty on alpine hill-sides. The Douglas Fir is sometimes recommended in its stead, but this beautiful and quick-growing tree must still be regarded as an experiment. There is not as yet a single old Douglas Fir, and there are some among our botanical experts who are yet in doubt whether, for all its young vigour, it will be a lasting tree for our country. For dry uplands in light soil there is the lovely Juniper, best of all its kind (though often in nurseries foreign ones only are offered to its exclusion), and for chalky soils and loams the Box luxuriates, and can be used as a small tree, as well as in its usual bush form.

The use of Common Ivy should not be forgotten. How important it is in winter may be perceived by any one during a country drive, when it will be seen under many conditions.

In Ireland we have the Arbutus (*A. Unedo*), that is found at the Lakes of Killarney, where it attains to the height of a small tree.

IMPORTANCE OF A SUITABLE CLIMATE.—Evergreen shrubs luxuriate generally in the climate

of the British Isles, especially in the southern and western counties, and constitute one of the great glories of the English garden, delighting in these sea-bound islands, with their cool and moist atmosphere.

It has been established, therefore, that the evergreen seeks an equable climate, free from extremes of cold and heat, and with an even supply of moisture to both leaf and root, favouring in a marked degree the sea-coast with its salt-laden winds. As we travel south, so opportunities for growing an increasing variety of evergreen trees and shrubs become more apparent, until, in the south of Cornwall and the south-west of Ireland, things may be planted out with safety which towards the midlands and north would scarcely exist. But latitude is not everything, and easily proved so by the rude vigour of plants from New Zealand and the Himalayas that are happy in the north of Scotland, but failures in the midlands and further south of England, requiring the protection of glass to develop their characteristic beauty.

The place for the tender evergreens must be protected from dry north and east winds. Mr. Bean writes me: "One of the most striking examples I have met with of the importance of having a situation such as is described is the Duchess' garden at Belvoir Castle. Belvoir is in the eastern midlands, a district where the average temperature is certainly not high, and where, during my stay there, the thermometer fell on more than one occasion to zero

(Fahr.). Yet in this particular spot (known as the Duchess' garden) there were fine specimens of Himalayan Rhododendrons — one of *R. Falconeri* being especially noteworthy for the way it grew and flowered—an *Azara microphylla*, 16 feet high, and other similar examples. The explanation of these successes, I believe, is entirely in the situation and exposure of the garden. It was formed on the slope of a rather steep hill, and is in the shape of an amphitheatre opening freely to the south. The bitter 'north-easter' loses much of its sting before it reaches the plants in this garden. In most gardens it is, of course, impossible to obtain sites so favourable as this. One has to make the best of what exists. But at the same time it shows the desirability, often the necessity, of choosing positions for the tenderer evergreens in which this need of shelter is satisfactorily met. Bamboos, Camellias, many Rhododendrons, Elæagnus, all afford striking examples of the value of a shelter belt on the north and east sides." A cool, moist soil is generally necessary for evergreen shrubs, and we know this to be true from the distress shown by many kinds during a dry and parching summer.

THE TIME TO TRANSPLANT.—A question frequently asked is, "When is the time to plant or transplant evergreens?" To this the reply is, early autumn. When planting is impossible at that season, then postpone it until late spring, avoiding winter and February and March. An evergreen should be disturbed whilst the roots are active, and by doing

this in September the shrub can establish itself before winter—hence the object of waiting until late spring, when autumn has been missed, as root growth has again begun. Autumn is a season generally of much atmospheric moisture, grateful dews, and welcome rains. It is the season for planting in general, and seldom is the work seriously disturbed until Christmas is past. We have shifted many evergreens without one failure in April and quite late in May, but our anxieties are great when the life-giving rains refuse to refresh the earth. The spring of 1901 will never be forgotten as a season of dry winds and brilliant sunshine, without rain to temper the unfortunate conditions, and the result was a great loss amongst newly planted evergreens. Mr. Bean says: "Some evergreens can with reasonable care be moved with perfect safety at any time, except perhaps from July to September. Rhododendrons are an example. During the last ten years I have transplanted them in every month of the year, except July and August. Indeed, in the case of Rhododendrons and most evergreen ericaceous plants, the problems of transplanting scarcely arise, simply because the fine fibres hold the soil so completely that the root system can, with due care, be removed practically intact. For the same reasons, very careful transplanting, such as is practised with a transplanting machine, may also be done at almost any season.

"When the roots of large evergreen shrubs have been unavoidably damaged, it is often a good plan

to remove a portion of the leafy branches. This helps to restore, in some measure, the balance between root and top. The shrub will frequently do this itself. Hollies, for instance, often lose a large proportion of their leaves after transplanting in spring; it is one of the surest signs of success, just as the *shrivelling* of the leaves on the branches is the worst. Evergreen oaks also furnish other examples. I remember a good proof of the value of late planting of evergreens being furnished here (Kew) by the Holm Oak (*Quercus Ilex*). A gap in an avenue of these trees had to be filled up, and a specimen was planted from the nursery at the end of April. The weather that followed was not unfavourable; but by the beginning of June I saw it was not going to live. However, it was then replaced by a similar plant, the young shoots on which were already 2 or 3 inches long. The young growth flagged a little at first, but the roots soon got hold of the soil, and the tree is now one of the healthiest in the avenue. The Holm Oak is notoriously bad to transplant."

PRUNING.—This is quite simple; but pruning, whether of the Rose, the deciduous tree or shrub, or the evergreen, seems to be regarded as a mysterious and wonderful operation. Many gardeners delight in using the knife apparently as a physical exercise, and the wise man is he who allows his shrubs to develop their natural beauty of form and flower. An evergreen shrub requires practically no pruning, as we understand the term generally, unless some

shape is desired foreign to its nature, or its allotted space has been outgrown.

Evergreens differ from deciduous plants in regard to time of pruning. Most deciduous things may be pruned at any time between the fall of the leaf and the recommencement of growth in spring. But evergreens should never be pruned in late autumn or winter. For plants that are grown merely for foliage sake and not for the flowers, pruning should be done just as new growth is commencing. In the case of flowering shrubs like Rhododendron or Berberis it should be done as soon as the flowering season is past.

As a matter of routine cultivation, however, and as an aid to improved health or freedom of flowering, pruning is not so necessary for evergreens as with many deciduous plants. A Rhododendron, a Pieris, a *Berberis stenophylla*, and all similar things never want pruning in the sense that a Spiræa or a Rose does.

CLIMBING EVERGREENS. — One of the peculiarities of the evergreen class of plants is the marked absence of climbing species in cool temperate countries — that is, true climbers, not, the numerous things that are made to do duty as such on walls. If one takes up a tree and shrub catalogue of even the best nurserymen, one is struck by the few evergreen climbers offered. In spite of the fact that the cool, temperate regions of the earth have been so thoroughly ransacked during the last century, no plant has ever been found that equals

or even approaches in value the Common Ivy and its varieties for the special purposes for which they are adapted. The best that are available are the Jasmine, *Ercilla volubilis* (*Bridgesia spicata*), Smilax, *Clematis calycina*, and tenderer things like Lardizabala and *Passiflora cærulea*.

Evergreens as a whole are much neglected in ordinary gardens. Instead of drawing upon the great wealth of shrubs available, so many go on using the same old things over and over again, generally Aucuba, Portugal and Cherry Laurels, *Rhododendron ponticum*, and such like.

THE BEST EVERGREENS.—The following is a representative list of the hardier species of evergreens which are considered most deserving of attention, and I have roughly grouped them according to their size. Conifers are not included. There is, of course, considerable difference in the sizes to which evergreens attain, according to the climate in which they are growing. The grouping here is merely intended to give an approximate idea of their habit. Those marked with an asterisk (*) are the more tender ones, and although valuable in the southern and warmer parts of the country, have not been grown in the colder localities, or if so, against a wall. Probably several quite as good as those mentioned are omitted, and there are always some beautiful plants that do well in certain places, but fail in the majority of gardens. Such evergreens, for instance, as *Fremontia californica*, *Embothrium coccineum*, *Carpenteria californica*, and many other things like the New Zealand Veroni-

WEEPING HOLLY ON LAWN.

cas, Himalayan Rhododendrons, Escallonias, &c. But on the whole these hardier evergreens, with the varieties that belong to them, adequately represent the best of those that can be grown in the average climate of Great Britain and Ireland. A garden that contains them all is rich in evergreens.

(i.) TREES

Common Box and varieties.
Common Holly and varieties (especially such superb varieties as I. Wilsoni, with large dark green leaves and crimson berries a laurifolia nova).
* Magnolia grandiflora.
Quercus Ilex (Holm Oak).
Yews.

(ii.) TALL SHRUBS (say 8 feet or more high)

Arbutus hybrida and varieties.
„ Menziesi.
„ Unedo (Strawberry tree).
* Azara microphylla.
Camellia japonica varieties.
Cotoneaster buxifolia.
Cratægus Pyracantha (Fiery Thorn).
Laurus nobilis (Sweet Bay).
Ligustrum lucidum.
Prunus lusitanica (Portugal Laurel).
Prunus Laurocerasus (Common or Cherry Laurel).
Quercus acuta.
„ coccifera (Kermes Oak).
„ phillyræoides.
Rhododendrons, garden varieties.
„ catawbiense.
„ Fortunei.

(iii.) MEDIUM SIZED SHRUBS (3 feet or more)

Aucuba japonica vars.
* Azalea ledifolia.
Berberis Aquifolium and vars.
„ buxifolia.
Berberis Darwinii.
* „ japonica.
„ stenophylla.
„ wallichiana.

(iii.) MEDIUM SIZED SHRUBS (3 feet or more)—*continued*

Ceanothus Gloire de Versailles.
* Choisya ternata (Mexican Orange Flower.
Cistus laurifolius.
Elæagnus macrophyllus.
„ pungens and vars.
* Erica arborea.
* „ australis.
* „ lusitanica.
„ mediterranea and vars.
Escallonia philippiana.
„ rubra.
* Eucryphia pinnatifolia.
Euonymus japonicus.
* Garrya elliptica.
* Hydrangea Hortensia.
Ilex cornuta.
Kalmia latifolia.
Ligustrum japonicum (Japanese Privet).
Olearia Haastii.
Osmanthus ilicifolius.
Phillyræa decora.
„ latifolia.
Pieris floribunda.
„ japonica.
Rhamnus Alaternus and vars.
Rhododendron azaleoides.
„ ponticum.
„ myrtifolium.
Rosmarinus officinalis (Rosemary).
Skimmia japonica.
Ulex europæus flore pleno (Double Gorse, Furze, or Whin).
Veronica Traversii.
Viburnum Tinus and vars. (Laurustinus).
Yucca augustifolia.
„ gloriosa.
„ recurvifolia.

(iv.) DWARF SHRUBS (under 3 feet)

Andromeda polifolia.
Azalea amœna.
Bruckenthalia spiculifolia.
Bryanthus empetriformis.
Calluna vulgaris and vars. (Heather, Common Ling).
Cotoneaster microphylla.
„ rotundifolia.
„ thymifolia.
Dabœcia polifolia.
Daphne Cneorum (Garland Flower).
„ oleoides.
Erica carnea.
„ ciliaris (Dorset Heath).
„ cinerea (Scotch Heather).
„ mediterranea hybrida.

ARBUTUS MENZIESII (*Kew*).

(iv.) Dwarf Shrubs (under 3 feet)—*continued*

Erica Tetralix (Bell Heather).
„ vagans (Cornish Heather).
Euonymus radicans and vars.
Gaultheria procumbens (Partridge Berry).
Gaultheria Shallon.
Genista hispanica (Spanish Broom).
Hypericum calycinum (Rose of Sharon).
Kalmia angustifolia.
„ glauca.
Ledum latifolium.
Leiophyllum buxifolium.
Pernettya mucronata and vars.
Rhododendron ferrugineum (Alpine Rose).
Rhododendron racemosum.
Vaccinium Vitis- idæa.

(v.) Climbers and Trailers

Arctostaphylos Uva-ursi.
Hedera Helix and vars. (Ivy).
Vinca major (Common Periwinkle).
Vinca minor (Lesser Periwinkle).

SHRUBS FOR SMALL GARDENS

IT is possible in small gardens to grow many beautiful shrubs without constant cutting of the branches to keep them within set bounds. Those mentioned in the following list will grow in ordinary soil. Transplant during late autumn and early winter; and one golden rule to observe in the case of shrubs obtained from nurseries is to plant them in their permanent position as soon as possible after they are received, but should anything occur to prevent this, the roots must be well covered with soil till planting takes place. In winter large numbers of plants are sold at auction rooms, but though they may appear cheap, this is not always so, as there is no guide to the length of time they have been out of the ground, and in a dry atmosphere many of the smaller roots may have perished. Such plants take a long time to recover from the check. If trees or shrubs are bought at a local nursery, there is the great advantage of getting them in the ground again as soon as possible. The shrubs named are fully described elsewhere in the book.

Aucubas, 3 to 6 feet. Evergreen shrubs, some with variegated, others with plain green leaves. The

male and female forms are separate. If the latter are fertilised, bright-red berries result.

Azaleas, 3 to 6 feet. For moist and peaty soil.

Berberis Aquifolium, 4 feet; *B. Darwinii*, 6 to 8 feet; *B. stenophylla*, 6 to 8 feet; *B. Thunbergi*, 2 to 3 feet; *B. vulgaris purpurea*, 5 to 6 feet (a purple-leaved variety of the Common Barberry).

Cornus Spæthii, 4 feet. This has rich golden foliage.

Cotoneaster frigida, 12 to 15 feet. A sturdy tree, with scarlet berries in autumn. *C. horizontalis*, 2 feet; *C. microphylla*, 3 feet; *C. Simonsii*, 5 to 8 feet.

Cratægus Oxyacantha (Common Hawthorn). As a small tree this is delightful in small gardens, especially the double-flowered forms, of which the richest in colour is Paul's double scarlet. As a contrast to this there is the double white.

Cytisus albus (White Broom), 6 feet; *C. nigricans*, 4 feet; *C. præcox* (Sulphur Broom), *C. scoparius* (Common Broom), 6 feet; *C. s. andreanus*.

Daphne Cneorum (Garland Flower), 1 foot; *D. Mezereum* (the Mezereon), and the white variety *alba*.

Deutzia crenata fl. pl., 6 to 8 feet; *D. gracilis*, *D. hybrida*.

Elæagnus pungens, 6 feet. This is not so much planted as it should be; it is a rounded evergreen bush of great charm. There is a good variegated variety.

Euonymus japonicus, 4 to 8 feet; *E. radicans*, 1½ feet. The variegated variety is very popular.

Forsythia suspensa, 6 to 8 feet. A climbing shrub, but may be kept in bush form if pruned back hard

after flowering. A mass of golden-yellow flowers in March or April.

Genista hispanica (Spanish Furze), 2 feet; *G. sagittalis.*

Hamamelis arborea (Japanese Witch Hazel), 6 to 10 feet; *H. succarıniana.*

Hedera (Ivy). It must not be forgotten that several varieties form bushes. These are known as Tree Ivies, and are invaluable in shady spots.

Hibiscus syriacus, 6 to 7 feet.

Hydrangea Hortensia (Common Hydrangea), 4 to 8 feet; *H. paniculata grandiflora*, 4 to 8 feet. Pruned back hard before starting into growth in spring, this can be kept dwarf, and if liquid manure is given the heads of creamy-white flowers in early autumn are very fine.

Hypericum calycinum (Rose of Sharon), 1 foot. Grows well under trees. *H. moserianum*, 2 feet.

Ilex Aquifolium (Common Holly). A familiar and handsome evergreen tree. The best variegated varieties are Golden Queen and Silver Queen. *I. crenata* (Japanese Holly).

Jasminum nudiflorum (Winter-flowered Jasmine), Common White Jasmine. Both for walls or to ramble over some support.

Kerria japonica, 5 feet. This little-known shrub should be more grown; its yellow flowers are small but pretty. *Flore-pleno* is a popular variety.

Laburnum.

Ligustrum ovalifolium aureum (Golden-leaved Privet), *L. sinense* (Chinese Privet).

HIBISCUS SYRIACUS (*Althæa frutex*), *VAR. CÆRULEUS.*

MOCK ORANGE (*Philadelphus coronarius*).

Magnolia conspicua (Yulan), 10 to 30 feet; *M. Lennei*, 6 to 12 feet; *M. soulangeana*, 6 to 15 feet; *M. stellata*, 3 to 6 feet.

Osmanthus ilicifolius.

Philadelphus coronarius (Mock Orange), 8 to 12 feet; *P. grandiflorus*, 10 to 15 feet; *P. hybrids.*

Prunus. This genus includes the Almonds, Apricots, Cherries, Peaches, Plums, and Laurels. The best are the Almond, Double-flowered Gean (*P. Avium fl. pl.*), *P. davidiana*, *P. japonica* (*P. sinensis*), *P. Laurocerasus* (Common Laurel), *P. lusitanica* (Portugal Laurel), *P. persica* (the Peach), *P. pseudo-cerasus*, *P. triloba*, 6 to 12 feet.

Pyrus Aucuparia (Mountain Ash or Rowan tree). *P. floribunda*, *P. japonica* (*Cydonia japonica*), *P. Maulei*, *P. spectabilis fl. pl.*

Rhododendrons. Excellent where soil and surroundings are suitable.

Rhodotypus kerrioides, 4 to 6 feet.

Rhus Cotinus (Venetian Sumach, Wig Tree, Smoke Bush), 5 to 8 feet; *R. glabra*, 6 to 12 feet; *R. typhina*, 8 to 15 feet.

Ribes aureum (Golden-flowered Currant), 4 to 6 feet; *R. sanguineum*, 4 to 6 feet.

Robinia hispida (Rose Acacia), 8 to 12 feet. A delightful tree; rosy flower clusters in early summer, but very brittle. Must not be in wind-swept corners. *R. Pseudacacia elegans* (False Acacia), 20 feet; the Common False Acacia is too large for small gardens.

Rubus deliciosus, 5 to 6 feet.

Skimmia Fortunei and *S. japonica*, 2 to 4 feet. Two

neat little evergreen shrubs, with bright-crimson berries in winter. Cool, moist soil.

Spartium junceum (Spanish Broom).

Spiræa arguta, 4 to 5 feet; *S. ariæfolia*, 8 to 10 feet, very beautiful; *S. Douglasi*, 6 feet; *S. japonica* (*S. callosa*) and varieties (see tables); *S. media*, 4 feet; *S. prunifolia fl. pl.*, 6 to 8 feet; *S. Thunbergi*, 4 to 5 feet.

Symphoricarpus racemosus (Snowberry), 5 to 6 feet. The variegated variety of the Common Snowberry is pretty.

Syringa vulgaris (Lilac), 8 to 12 feet. Described.

Ulex europæus fl. pl. (Double-flowered Furze or Gorse), 4 to 6 feet. Beautiful in hot and dry soil.

Viburnum Opulus sterile (Guelder Rose or Snowball tree), *V. plicatum*, 5 to 6 feet.

Vinca major (Periwinkle), 6 inches to 1 foot. A little creeping shrub, delightful for a rough bank, and will thrive under trees better than most shrubby plants. The pretty blue flowers appear for a long time. There is a variety with prettily variegated leaves. *V. minor*, another species, is smaller altogether. There are deep-blue and white varieties.

Weigelas, 6 to 8 feet. Excellent shrubs for small gardens.

Shrubs for Town Gardens

From the preceding list of shrubs for small gardens a selection suitable for towns is appended. Many things refuse to live in the smoky and confined air of towns. This is particularly noticeable in the case

of evergreens; the pores become choked with sooty deposit, and the plant consequently soon fails, whereas many of those whose leaves are removed annually are not so seriously affected. Conifers are generally a failure. This is a small list, but only small gardens are under consideration.

Aucubas.
Berberis Aquifolium.
Berberis stenophylla.
Cotoneasters, especially C. frigida, which is, however, a small tree.
Cratægus Oxyacantha (Hawthorn) and varieties.
Cratægus Pyracantha (Tree Thorn).
Daphne Mezereum.
Euonymus japonicus.
Forsythia.
Genista hispanica.
Hedera (Ivy).
Hibiscus syriacus.
Jasminum officinale.
Kerria japonica.
Laburnum.
Ligustrum ovalifolium aureum (Golden-leaved Privet).
Magnolia stellata, M. conspicua.
Osmanthus ilicifolius.
Philadelphus (Mock Orange). All the species and varieties.
Privet.
Prunus Amygdalus (Almond).
Prunus Avium flore-pleno (Double-flowered Gean).
Prunus Laurocerasus (Laurel).
Prunus Persica (Peach).
Prunus pseudo-cerasus.
Pyrus Aucuparia (Mountain Ash).
Pyrus floribunda.
Pyrus japonica and varieties.
Rhus typhina (Sumach).
Ribes aureum.
Ribes sanguineum and varieties.
Robinia Pseudacacia and varieties.
Spartium junceum.
Spiræa arguta.
Spiræa japonica and varieties.
Symphoricarpus racemosus (Snowberry).
Symphoricarpus vulgaris.
Syringa vulgaris (Lilac) and varieties.
Viburnum plicatum (Chinese Guelder Rose).
Weigela rosea and varieties.

SHRUB AND FLOWER BORDERS

WHERE there are wide lawn spaces and fine trees in garden ground much of the effect is often lost or spoiled by the presence of unworthy trivialities where there should be distinct and bold features. The most frequent offender is a narrow strip of flower border, edging shrubbery and coming between the shrubs and the grass. Nothing is more useless than such a border. The shrubs would look much better coming right down to the grass, while if bright or distinct colour is absolutely required, it is easy to make a place here and there where some patch of Lily or other flower of bold form may be well seen.

These narrow borders are undesirable, not only for their poor effect—we think not of one, but of many a fine place where there are furlongs of such futility—but because the plan is destructive to both shrubs and flowers. If the ground is not dug for a year the roots of the shrubs invade it; if it is dug and enriched for the flowers, the feeding roots of the shrubs are mutilated.

In the case of a place where lawn comes up to shrub plantation, which, again, is backed by woodland, the better way is to have, in just the right places, a bold planting of something fairly large, whose flower shall endure for a good while, to let the large

TALL EVERGREEN SHRUBS IN A FLOWER BORDER.

group of it come right through to the lawn, and also stretch away back into the woodland. In our southern counties, in sheltered places, where the ground is cool and moist, and at the same time well drained, nothing can be better than Hydrangeas. Other softer plants for the same treatment would be the fine *Nicotiana sylvestris*, and for earlier in the year White Foxglove, and even before that *Verbascum olympicum*. *Lilium auratum* is also superb in such places, and *Polygonum Sieboldi* and others of this fine race of autumn-blooming plants. If some of the shrubs at the edge of the grass, such as Azaleas, have beautiful colour at more than one time of the year, both at the flowering time and in autumn blaze of foliage, two seasons of beauty are secured.

Hardy Ferns are undeservedly neglected as plants to group about the feet of shrubs; some of the bolder kinds, as the Male Fern and the Lady Fern, are charming as a setting to the Lilies that love cool, shady wood edges.

If shrubbery edges were planned with a view to good effect both far and near, what capital companies of plants could be put together. As one such example, let us suppose a cool spot, with peaty or light vegetable soil, planted in the front with *Skimmia* and hardy Ferns, *Funkia grandiflora*, and *Lilium rubellum*. A little farther back would come *Lilium Brownii*, then a group of *Kalmias* and *Lilium auratum*. One carefully-planted scheme such as this would lead to others of the same class, so that the quantities of grand shrubs and plants that are only

waiting to be well used would be made into lovely pictures, instead of being planted in the usual unthinking fashion, which is without definite aim, and therefore cannot possibly make any good effect.

We do not, as a rule, plant upright-growing Conifers of the Juniper and Cypress class in our flower borders, and yet the illustration shows how this may be done with the very happiest effect. Probably in this case the trees were there already, and the flower border was wanted, and therefore was made in circumstances that would not have been specially arranged at the outset. But it has been done with rare intelligence and sympathy, and the result is excellent. Here also is seen the best kind of edge treatment, for the grass is either cut with the scythe or the plants at the edge are lifted with a stick as the machine runs along, so that the usual pitiless machine edge is not seen, and the plants at the side bush out over the grass just as they should do. This is a thing that is rarely seen well done in gardens.

SHRUBS UNDER TREES

IT is often a vexed question what to plant under trees when the space is bare, and sometimes there is an ugly view seen beneath the branches to shut out. Evergreens are the sheet anchor, relieved with a few deciduous shrubs grouped amongst them.

Much depends upon the tree, whether a Beech or an Oak, a Maple or a Chestnut, and so on, as trees vary considerably in their method of rooting, as well as in the shade they give during the summer months. This affects the welfare of the plants underneath. Such trees as Oak, Ash, Plane, Birch, and Horse Chestnut are inclined to root deeply when they have grown to a fair size, and do not interfere directly with anything underneath them, although the roots extract much moisture from the soil.

On the other hand, Beech, Elm, Lime, and Sycamore are more surface-rooting, and their roots often get entangled with and gradually kill plants growing near them. Beech and Elm are the greatest offenders, and grass frequently perishes under these trees. A few liberal soakings of water in dry weather are beneficial to shrubs or anything else under trees, but the soakings must be thorough, as mere sprinkles are more harmful than otherwise. The spread of large tree branches should also be noticed in summer,

as sometimes one or two of the lower ones may be removed with benefit to the shrubs, judicious cutting away letting in light and air.

The best of the larger growing evergreens to use under trees are Laurels, both common and Portugal, Yews, Box, Osmanthus, Aucubas, Phillyræas, common and oval-leaved Privet, *Ligustrum sinense*, and *Rhododendron ponticum*. Of these Yews, Box, and Osmanthus are perhaps as successful as any. The Osmanthus is not usually considered suitable for this purpose, but it succeeds well in the shade, and keeps a good dark-green colour. Hollies are sometimes recommended, but, though they may occasionally thrive under trees, it is not advisable to use many of them, as they are more often a failure, becoming thin and straggling in the course of a year or two. Of dwarf-growing evergreens *Berberis Aquifolium*, Butcher's Broom (*Ruscus aculeatus*), *Cotoneaster microphylla*, *Euonymus japonicus*, and *E. radicans*, with their respective varieties, Skimmias, *Gaultheria Shallon*, Ivies, *Pernettya mucronata*, St. John's Wort (*Hypericum calycinum*), and Vincas can all be recommended, as they all do well in the shade, and most of them will flower freely.

For a very dry spot where nothing else will grow the Butcher's Broom and St. John's Wort should be planted, as both will grow and thrive where other plants die. With deciduous shrubs under trees the difficulty is not so much in getting them to live as in coaxing them to flower, but a few of them will do well in the shade, and, as a rule, bloom freely.

Of these the best are the common and White Brooms, *Azalea pontica*, *Genista virgata*, *Philadelphus*, Forsythias, and *Daphne Mezereum*. The shrubby Spiræas may also be used sparingly in a fairly light and open place, though plenty of sun is required as a rule to enable them to flower properly. In addition, though their flowers are insignificant, *Cornus alba*, with its red stems in winter, the Snowberry (*Symphoricarpus racemosus*), which is laden every year with white berries long after the leaves have fallen.

The question about shrubs growing under trees is so frequently asked that the names of those most successful are given, but generally the beauty of the tree is lost when smothered up with evergreens and other shrubs beneath its spreading branches. A tree is a picture in itself, and it is pleasant to see the grass creep to the branch edge and then cease, leaving a brown earth patch under the canopy of foliage.

HARDY SHRUBS IN THE GREENHOUSE

HARDY shrubs have for many years brought colour and fragrance to the greenhouse in the depth of winter, but we think it is only within recent years that they have been used in such beautiful variety as at the present time. The great show of the Royal Horticultural Society in the Temple Gardens, and many of the delightful fortnightly displays, have been responsible for much of their present popularity, and the picture of a group of Plums, Peaches, Almonds, Wistarias, and many other things in flower long before their natural season is refreshingly pleasant when perhaps winter still lingers.

So many shrub families may be used for gently forcing into bloom before their time that it is impossible to lay down hard and fast rules with regard to culture. In some cases the plants may be lifted in the autumn, then potted, and placed out of doors until they are removed under glass, when the flowers will open in profusion ; but the shrubs that can be treated in this way make dense, fibrous masses of roots, therefore scarcely feel the check of removal. Some shrubs, however, transplant so badly that it is needful to grow them entirely in pots.

Shrubs for flowering under glass are grown in large quantities by some English nurserymen, and

there is a considerable trade in them between this country and Holland. The Dutch cultivators in particular grow a great many of their plants in pots, the general method being what may be regarded as a modification of pot culture and planting out, that is to say, although the plants are potted, and that in fairly large pots, they are plunged in the open ground over the rim of the pot, and in a position fully exposed to air and sunshine. Although a few roots may be pushed out over the rim, and also through the hole in the bottom, this treatment has the effect of keeping them far more compact than would otherwise be the case, hence the check of removal is not so great as if they have unlimited room. This partial confinement of the roots checks a too luxuriant growth and promotes flower-bud formation.

In the cultivation of shrubs for this purpose, whether they are confined in pots or planted out, choose an open, well-exposed position, carefully guarding against overcrowding, as this tends to leaves instead of flowers. With the same object, they must be kept free from weeds, and not allowed to suffer from drought.

With few exceptions, the best time to lift and pot the plants is as soon as possible after the leaves have fallen in the autumn. When done at this time the young roots recover from the check, and get hold of the new soil before the flowering season. The pots must be plunged in leaves, spent hops, or cocoa-nut refuse, to keep them in an even condition

of moisture, and after potting never allow the roots to suffer through dryness. Whether intended for very early flowering or later on, the plants should at first only be taken into a comparatively cool structure, and, if necessary, brought to a greater heat by degrees, and the lower the temperature, say about 55 degrees, the more beautiful the flower colouring; while, when they are only required in bloom a little before the natural season, mere protection from sharp frosts and keen winds is alone essential. The advantage of early potting is shown conspicuously in the case of Azaleas. The flowers produced by plants that have been potted soon after the leaves have fallen will remain twice as long in beauty as on those not potted until after Christmas.

In a general way, plants that have been forced hard to get them into flower early cannot be depended upon to bloom satisfactorily the following season, no matter how carefully they may have been treated, but those merely brought into bloom a little in advance of those out of doors will undergo the same ordeal next year. Too often, when the flowers are over, the shrubs are put away in some corner and forgotten, and the result is injured leaves and general upset. Shrubs so treated cannot perform their duties in the year following. Shrubs that have finished flowering under glass before the time of frost and cold winds is past should be at first carefully protected and gradually hardened off. Where a cool house is not available, a frame in a

sheltered position is suitable, but even then avoid overcrowding. By the middle of May this precaution is not so necessary, although keen frosts and winds are experienced that would injure foliage developed under glass. Where potting is necessary, that is, in the case of plants grown permanently in this way, it should be done before they are placed in their summer quarters. For this the pots should, if possible, be placed on a firm bed of ashes and plunged in some moisture-holding material, such as partially decayed leaves, spent hops, or cocoa-nut fibre refuse. Occasional doses of liquid manure during the growing season are beneficial, particularly in the case of shrubs that have not been re-potted, as the limited amount of nourishment in the soil will have gone by that time.

The following is a list of the best shrubs for flowering under glass:—

ANDROMEDA (known also as Pieris and Zenobia).—The Andromedas are beautiful shrubs, with lily-of-the-valley-like flowers, and form such a mass of fibrous roots that they can be lifted from the open ground and potted without receiving any check. When placed in a cool house they flower profusely. The best are *A. floribunda*, which has crowded, somewhat stiff spikes; *A. japonica*, known by its drooping racemes; and *A. speciosa pulverulenta*, which has hoary leaves and waxy-white bells. The first two may be had in flower by the end of March, but the other is later.

AZALEA.—One of the useful classes of shrubs that

we have for this purpose, quite as valuable for hard forcing as for flowering later in spring. Although the formation of the roots is dense and wig-like, they are, as already stated, all the better for being potted early, while they may be permanently grown in pots in a satisfactory way. The Chinese *A. sinemsis*, or *mollis*, as it is more popularly called, is of close and compact growth, with massive clusters of large flowers, varying in colour from pale yellow to deep orange salmon, and innumerable tints and shades. Among the most beautiful are Alphonse Lavallé, bright orange; Anthony Koster, deep yellow; Dr. Pasteur, orange red; General Vetten, orange; Hugo Koster, salmon red; and J. J. de Vink, soft rose. The varieties grouped under the head of Ghent Azaleas are very beautiful, and quite as suitable for forcing as the preceding. The individual flowers are smaller, but they are borne in such profusion that the whole plant is a mound of blossom. The colour varies from white, through all shades of yellow, orange, pink, rose, and scarlet, to bright crimson, so that plenty of variety is available, and some forms have double flowers. These are not so showy as the single Azaleas. Azaleas, when planted out, require a certain amount of peat or other vegetable matter in the soil, and this is even more important when they are grown in pots. A suitable compost consists of equal parts of loam, leaf-mould, and peat, with half a part of sand. Very little pruning is needful, and this to only consist of shortening an occasional shoot that threatens to upset the balance

of the plant, and thinning wiry and exhausted growths, but remove seed pods directly the flowers are over, as these are a drain upon the plant's strength.

BERBERIS.—Few Berberises are of much account for greenhouse decoration, the best being the orange-flowered *B. Darwinii* and the rich yellow *B. stenophylla*. They will not flower well if forced hard, but in a cool house, with very little heat, they are very charming. A successful grower of shrubs under glass writes: "I knew of some bushes of *B. stenophylla* that had been treated in this way for five years, and little trouble was taken with them, yet they were so beautiful as to be much admired every year. After flowering, the weakly growths were cut out and the pots plunged in the open ground. Manure water was occasionally given, and with this treatment they did well."

CARPENTERIA CALIFORNICA.—This evergreen shrub, even in the south of England, is all the better for slight protection, and it is delightful in the almost cold house, the white flowers, reminding one of those of the Japanese anemone, appearing about May. It is a very beautiful shrub.

CARYOPTERIS MASTACANTHUS.—This Chinese shrub will bloom freely in light and warm soils, bearing lavender blue flowers in profusion during the autumn; indeed, so late that when cold and wet weather occurs they often fail to expand at all. This difficulty is overcome when the plants are grown in pots and taken into the greenhouse for the flowers to open; it is then very pretty and much liked. After

flowering, the shoots generally die back almost to the ground, but break up with renewed vigour in spring.

CEANOTHUS.—Some of the early-flowering Ceanothuses are very valuable ; they may be grown in pots, and their flowers are of pleasing blue colouring, which is unusual and therefore welcome. Among the best for this purpose are *C. dentatus*, *C. papillosus*, and *C. veitchianus*. Ceanothuses do not transplant very well, and if intended for flowering in pots should be lifted in the autumn, potted carefully, and wintered in a cool house. They may be kept altogether in pots, giving them much the same attention during summer as *Berberis stenophylla*.

CERCIS SILIQUASTRUM.—This is the Judas tree, and as many know, while the leaves are still absent the stems bear clusters of rosy-purple flowers. It may be lifted and potted in the autumn or kept altogether in pots, but on no account indulge in hard forcing, as it resents this treatment. Well-grown specimens are very pretty when in flower in late March.

CHIONANTHUS.—There are two species of Chionanthus, viz. the North American Fringe tree (*C. virginica*) and its Japanese representative *C. retusus*. They resemble each other very much, but the American form is the better of the two. The Fringe trees are very charming when in pots. Prune back hard after flowering and fully expose to the sun to ensure plenty of flower buds. A moist soil is essential.

MEXICAN ORANGE FLOWER (*Choisya ternata*). This will bear its white fragrant flower clusters in March in a greenhouse, and a succession is maintained for some time. It is most satisfactory when grown altogether in pots and plunged outside during the summer.

CLEMATISES.—Of late years the various forms of Clematis have been grown largely under glass and used for various purposes, not only in the shape of large specimens, but in pots five inches in diameter, the plant being secured to a single stake and carrying several big showy flowers. Two somewhat new continental varieties, Marcel Moser and Nelly Moser, have proved very useful for this treatment. The plants flowered in small pots are those that are propagated in the preceding spring and plunged out of doors during the summer. The Himalayan *C. montana* that flowers naturally so early in the season readily responds to a little heat, and in the greenhouse in spring it is almost as welcome as the New Zealand *C. indivisa*.

CLETHRA.—Although *C. alnifolia* does not flower until the autumn it may be had in bloom in spring. Of course, it will not be so early as shrubs that are naturally in beauty in the spring, but in May its white, fragrant flowers should be seen. It requires a cool, moist soil and sunshine, while prune moderately immediately after flowering. Lifted in the autumn soon after the leaves drop, it will succeed well.

CORYLOPSIS SPICATA.—This reminds one of a

small Hazel bush, and in early spring before the leaves appear, the drooping clusters of fragrant yellow flowers appear in profusion, simple protection is all that is needed to get flowers quite early in the year, when it is very pretty in the greenhouse. It thrives well kept permanently in pots, or it may be lifted and potted in the autumn. No pruning is necessary.

CYTISUS (Broom).—The various Brooms are much admired, whether in the open ground or under glass, and for the latter purpose they must be established in pots, for their roots are few, descend deeply, and therefore transplanting is difficult. They will not bear hard forcing, but in a greenhouse may be had in flower by the end of March, or soon after. If kept altogether in pots, cut them hard back after flowering to encourage vigorous shoots for another year. Numerous sorts may be grown in pots, particularly the Spanish Broom (*C. albus*), the common Broom (*C. scoparius*), with the hybrid Andreanus and the sulphur-coloured *C. præcox*.

DEUTZIA.—The pretty *D. gracilis* is well known as one of the best of all shrubs for early forcing. The Dutch cultivators grow it in pots and plunge it in the open ground. Of these smaller Deutzias some beautiful hybrids have been raised, particularly *D. Lemoinei*, *D. hybrida venusta*, and *D. kalmæflora*, all of which may be forced almost, if not quite, as readily as *D. gracilis*. The old and exhausted shoots of these Deutzias should, if the shrubs are kept in pots, be cut away to allow young and vigorous ones to

develop. Though they may be had in flower early, they are much appreciated in the greenhouse, even as late as the month of May. The larger growing *D. crenata*, with its numerous varieties, *Candidissima flore pleno*, *Wellsii*, and *Watererii* will not bear hard forcing, but can be had in flower with little trouble in April and May. Good, well-ripened bushes may be lifted in the autumn, and if potted and carefully attended to they will flower well the following spring.

HEATHS.—*Erica carnea* is very pretty in a cool house in midwinter, all that is needed being to lift the clumps from the open ground, pot, and keep watered; while the large-growing Portuguese Heath (*E. codonodes*), which flowers naturally in February in the open ground, when the weather is not too severe, well repays glass protection at that season.

FORSYTHIA.—The Forsythias flower in the open ground by the month of March, and indoors, of course, much earlier. The most effective is *F. suspensa*, which is naturally a climber, or, at all events, of loose and rambling growth. When needed for pots, tie the principal shoots to a stout stake, and let the smaller branches grow at will, the result being a fountain of yellow flowers. After flowering in the greenhouse, cut back the shoots hard, leaving only an eye or two at the base. These eyes will break up and produce flowering shoots for another year. By this method of treatment the same plants may be kept for many years, provided they are carefully attended to and given occasional doses of liquid manure during the summer.

HYDRANGEA.—The many varieties of the common Hydrangea are all valuable for the greenhouse, particularly *Cyanoclada*, *Mariesii*, *Rosea*, *Stellata*, and Thomas Hogg. To obtain small flowering plants the cuttings are struck in spring or early summer, grown on freely for a time, and well ripened by full exposure to air and sunshine before autumn. Plants grown in this way readily respond to a little heat in the spring. Larger specimens, too, may be brought on in the same way. The Japanese *H. paniculata grandiflora* needs quite different treatment, the plants being generally grown in the open ground, from whence they are lifted and potted in the autumn. Before potting prune the long, wand-like shoots back hard, leaving only about two eyes at the base. By so doing the plants are kept dwarfer, and the flower heads are larger than if no pruning were done. By some the Hydrangea is grown as a standard, and is very effective when in beauty.

ITEA VIRGINICA.—A neat little bush, about a yard high, with dense spikes of white flowers. It needs a sunny spot in a cool and moist soil, and under these conditions will flower freely if carefully lifted in the autumn and potted. It must not suffer from dryness afterwards. No pruning is necessary.

JAMESIA AMERICANA.—A pretty little white-flowered shrub from the Rocky Mountains. It will bloom freely under glass, but must not be forced hard; it may be treated in the same way as the Itea.

KALMIA.—All the Kalmias are good pot shrubs. The roots are dense and wig-like, reminding one of

those of a Rhododendron, so that well-budded plants can be lifted in the autumn and potted without risk. They must be brought on gradually in a cool house, and never suffer from want of water. The earliest to bloom is *K. glauca*, followed by *K. augustifolia*, while later on there is the largest and best-known species, *K. latifolia*, the Mountain Laurel of the United States, which has pretty pink flower clusters.

KERRIA JAPONICA (the Jews' Mallow).—The single Kerria is a twiggy bush, with bright yellow flowers, like those of a single Rose, and expand quickly in spring. The ordinary double Kerria is very bright amongst forced shrubs ; they can be potted in autumn or grown permanently in pots. After the flowering season is over the double variety can be spurred back hard to prevent a tall weakly growth.

LABURNUM.—This has long been used for the greenhouse, and very effective it is when well flowered. It is as a rule most successful when in large pots, in the shape of a standard. Prune back moderately after flowering.

LONICERA (Honeysuckle).—As *L. fragrantissima* flowers naturally out of doors soon after Christmas when the weather is mild, it is evident that no forcing is needed to obtain it at that season, and in a cool greenhouse the little white flowers are remarkable for their delicious perfume. As spring advances the early Dutch may be flowered under glass, while the scarlet Honeysuckle (*L. sempervirens minor*) is a delightful greenhouse plant, not used so much as it

deserves to be for rafters and similar purposes in the greenhouse.

LOROPETALUM CHINENSE.—This Chinese shrub, with its long, pure white, strap-shaped petals, bears much resemblance to the Chionanthus, and is quite as desirable for flowering in pots. It may be either lifted in the autumn or grown altogether in pots.

MAGNOLIA.—The Magnolias can be grown under glass. If allowed to come gradually into bloom in a greenhouse the large flowers will open freely. As a rule they transplant badly, and for that reason, at least the choicer ones, are kept in pots for convenience in removal. From this it will be understood that as a rule it is more satisfactory to keep them permanently in pots than to lift them in the autumn. *M. purpurea* can be grown more easily than any of the others in this form. When grown in pots for the greenhouse, if they get too large for that structure they may be planted permanently out of doors and their place taken by smaller plants. Of those particularly valuable for this treatment are the little *M. stellata*, a charming shrub; *M. Lenné*, which has massive chalice-like flowers, rosy-purple outside; *M. conspicua*, *M. soulangeana*, and *M. purpurea* among the early Magnolias; and of those that flower later the Japanese *M. parviflora* and *M. Watsoni* do well in pots.

OLEARIA.—The best known of the Daisy trees of New Zealand is *O. Haastii*, which flowers freely in August. Two at least of the species bloom naturally much earlier, namely *O. Gunnii* and *O. stellulata*, and very pretty they are under cover and with their daisy-

like blossom. To be seen at their best, grow them altogether in pots and give the protection of a cool house in winter.

TREE PÆONIES.—The magnificent varieties of the Tree Pæony that have appeared in recent years have led to a great increase in their culture. Though hardy in many places, their young leaves and flowers are frequently injured by late frosts, hence they are often flowered under glass. In this way they make a gorgeous display in the greenhouse, which is sufficiently warm for them in all stages. If forcing is attempted they are quickly spoilt. They must be potted in good loamy soil, and are most satisfactory when grown altogether in pots, as many of the long fleshy roots will be injured in digging up established plants.

PERNETTYA MUCRONATA.—Though grown chiefly for its ornamental berries, neat little bushes are very pleasing in the greenhouse when thickly studded with little white lily-of-the-valley-like flowers, so pretty against the dark-green colouring of the leaves. The treatment recommended for Kalmias is suitable for the Pernettyas.

PHILADELPHUS (Mock Orange).—This in its several forms may be lifted in the autumn and flowered well the following spring, not early, as the forcing must be very gèntle. Even then the perfume of *P. coronarius* is too powerful to be pleasant in a confined space. This objection cannot, however, be urged against M. Lemoine's hybrids between this species and the pretty little Mexican *P. microphyllus*, which has

a fragrance like that of ripe apples. These newer hybrids—*Avalanche, Boule d'Argent, Gerbe de Neige, Manteau d'Hermine, Mont Blanc,* and *Lemoinei*—are all worth a place either in the open ground or for flowering in pots.

PRUNUS.—Several classes that were at one time considered as separate genera are now included in the genus Prunus, which was formerly limited to the Plum family. Now the Cherries, Almonds, and Peaches are only sections of the genus Prunus, as explained elsewhere in this book, but as they are better known under their respective names it will be wiser to refer to them thus. The Cherries (*Cerasus*) have been added to considerably of recent years, several varieties having come from Japan, mostly of *P.* (*Cerasus*) *pseudo-cerasus.* These, which include such varieties as *Sieboldi, Watereri,* and J. H. Veitch, all flower freely when quite small, an important point when considering plants needed for flowering under glass. Where larger plants are required the double form of the Wild Cherry (*P. Avium*) is very beautiful. The Almonds (*Amygdalus*) flower early naturally, and under glass, of course, earlier still; the variety *purpurea* is one of the best, while a distinct species, *A. davidiana* and its variety *alba,* are also suitable for growing under glass. The Peaches (*Persica*) form a delightful group, all available for flowering under glass; indeed, they respond readily to gentle forcing, hence may be had in bloom by March. There are several varieties, the flowers ranging in colour from white, through pink, to crimson, and double as well

as single. One of the finest forms is *magnifica*, a Japanese variety, semi-double, and brilliant carmine crimson in colour.

Of the true Plums, special mention must be made of the dark-leaved variety of the Cherry Plum, known as *Prunus Pissardi*, of the pretty little *P. sinensis alba plena*, and *Rosa plena*, which has slender shoots, wreathed for the greater part of their length with double rosette-like flowers, and the charming pink semi-double *P. triloba*. All these forms of Prunus will, if they have been regularly transplanted, lift well in the autumn and flower without a check. They are also quite satisfactory if kept altogether in pots when spurred back after flowering and encouraged to make free and well-ripened growth during the summer months, when they should be plunged out of doors in a sunny spot.

PYRUS.—The beautiful *P. Malus floribunda* is quite happy under this treatment, and *P.* or *Cydonia japonica* (the Japanese Quince) that flowers early in the year is pretty under glass, especially the distinct *P. Maulei*, which is of dense and compact growth, and bears salmon-red flowers in profusion. Grow the Pyruses in a similar way to the Prunuses.

RAPHIOLEPIS JAPONICA (*R. ovatus*).—An evergreen of sturdy growth, and about 3 feet high, with terminal spikes of pure white hawthorn-like flowers. It is decidedly uncommon and ornamental when in bloom. Out of doors its season is June, but, of course, is earlier under glass.

RHODODENDRON.—These are the most gorgeous

of shrubs, and largely used for flowering in pots or tubs. They form a dense mat of fibres, and can therefore be lifted with little check. Owing to this they can, when ordinary care is used, be transferred to new quarters without losing a leaf, not only when potted, but also when planted out in the open ground. Hard forcing must be avoided, but the Rhododendrons may be brought on gradually in gentle heat. Under this treatment they must be well supplied with water, and liberal syringing is also beneficial. The wide range of colouring in the Rhododendron family gives an opportunity for getting almost any shade desired.

RHODOTYPUS KERRIOIDES.—A beautiful Japanese shrub, reminding one of a Kerria, but the flowers are white. It will succeed with the same treatment as the Kerria requires.

RIBES (Flowering Currant).—Both the yellow-flowered *R. aureum* and the curious forms of *R. sanguinea* can be brought into flower early under glass, but the flowers do not last long, and for this reason the shrubs are little used for the purpose.

SPIRÆAS.—An extensive family, some of which bloom delightfully when lifted and potted in the autumn and brought into flower in gentle heat. They may also be grown permanently in pots, but as a rule autumn potting is preferable. The most popular is *S. confusa* or *media*, but also very charming are *S. arguta*, one of the most beautiful of all Spiræas, *S. Van Houttei*, *S. Thunbergi*, and *S. prunifolia fl. pl.*,

which all bear white flowers, those of the last mentioned being double.

STAPHYLEA (Bladder Nut).—*S. colchica* is most used for forcing, and is a charming shrub for the purpose. It quickly responds to heat and moisture. Brought on in a gentle greenhouse temperature, it gives a wealth of drooping clusters of white fragrant flowers. Keep the shrubs in pots, as the buds are produced more freely than when planting out is done, and after the flowers are over prune hard back.

SYRINGA (Lilac).—The Lilac is one of the most popular of shrubs for forcing, and may be had in bloom by Christmas or soon after, its flowers being welcome from then until they appear out of doors. Thousands of plants for flowering under glass are sent to this country from Holland every year, the neat bushes, about 2 feet high, having been grown in pots 7 or 8 inches across and plunged in the open ground. This treatment results in close and compact balls of soil, which, when turned out of the pots, retain their shape and bear the journey well. These plants are pruned hard back after flowering to keep them dwarf. Lilacs that have been frequently moved may be lifted and flowered without risk. Most of those sent from Holland consist of the white-flowered variety, *Marie Legrange*, but the dark-coloured *Charles X.* is also grown. The many double-flowered Lilacs are not so popular as the singles. Although it has been mentioned that considerable quantities of plants are received from Holland, excellent dwarf specimens may be obtained here by plunging out.

VIBURNUM.—When the plants are well budded the Laurestinus (*V. Tinus*) will flower throughout the winter in a greenhouse. Of those that are amenable to slight forcing the best are the common Guelder Rose (*V. Opulus sterile*), the Chinese *V. plicatum*, and *V. macrocephalum*. Treat them in the same way as the Lilac. The Guelder Rose is a delightful shrub under glass, with its wealth of ivory-white balls. It is one of the most interesting of all the things that can be brought into bloom in a greenhouse. Treat the Viburnums in the same way as recommended for the Lilacs.

WEIGELA.—Many of the Bush Honeysuckles, as the Weigelas are called, will flower well in a cool house, but they do not last sufficiently long in bloom to make them of great value for this purpose. The best is the dark-coloured *Eva Rathke*, which grows naturally into a neat bush; the flowers are of claret colouring.

WISTARIA.—It is only within the past few years that the Wistaria has been used to any extent for flowering in this way, but now it is universally admired. At the exhibitions early in the year it always attracts more attention than any other shrub grown in a greenhouse; the soft lilac colouring of the flowers is very beautiful against the tender green of the expanding leaves. The best and general way is to grow it as a standard, as the racemes hang down in graceful profusion. *W. sinensis* is the Wistaria planted so freely against houses and pergolas, and for flowering under glass the variety *alba*

may be mentioned; it is more satisfactory than in the open garden. *W. multijuga*, which has racemes of great length, may also be tried, but *W. sinensis* is as charming as any, and the most likely to give satisfaction. Wistarias transplant badly, hence in nurseries are usually kept in pots; therefore, for flowering under glass, permanent pot culture is the proper treatment. To obtain standards train up a single shoot till the required height is reached, then stop it, and encourage the formation of branches. When the head has reached flowering size, after the flowers are over, spur the shoots back to good eyes to keep the growth fairly compact.

JAPANESE MAPLES (*Acer palmatum* and varieties).—The handsome foliage of the Japanese Maples forms their chief charm. When grown under glass they are very beautiful, the leaves varying greatly both in colour and shape; some almost plain, others deeply cut and almost fringe-like.

SHRUB GROUPS FOR WINTER AND SUMMER EFFECT

IN the gardens of Lord Aldenham at Elstree an interesting feature is the grouping of shrubs for summer and winter effect, and some valuable notes contributed to the *Garden* by the gardener there, Mr. Beckett, may be helpful to those desirous of getting the best results from both tree and shrub :—

The grouping of suitable subjects, either in the pleasure-ground proper, on the margin of wood, lake, and stream, and especially so in the half-wild garden, when carefully carried out, has such a good effect at all seasons that it is difficult to understand why it is not more generally done, for only when massed together is it possible to see the true beauty of many of the commoner hardy shrubs. For some years we have practised this way of planting to a considerable extent, and I will endeavour to give my experience as a possible help to others.

The chief desire here has been to create autumn and winter effect, and I may mention that Nature has assisted us but little, as the land is not undulating but generally flat and uninteresting, consequently much thought and attention have been devoted to attaining the desired object. No two shrubs grown either for the beauty of their leaves

or bark should be mixed together; the display is more pleasurable when they are kept apart.

Having determined on the sites to be planted, use white stakes for marking the outline, and plant boldly. The ground should be thoroughly trenched, and poor land well enriched with farmyard manure, and the planting proceeded with either in spring or early autumn. This planting will apply to dwarf-growing subjects. I will first of all deal with the deciduous section.

ARONIA FLORIBUNDA.—A delightful plant when grown as a bush, bearing sweetly-scented Hawthorn-like flowers in May, very effective, and succeeded by a wealth of deep-purple berries in autumn. This should also receive an annual pruning during winter or early spring. Allow a distance of 2 feet 6 inches between the plants, which are well suited for any purpose. The ground should be kept clean underneath it.

PYRUS ARBUTIFOLIA is a synonym.

BERBERIS THUNBERGI.— Few deciduous shrubs can excel this for its beautiful foliage during autumn, and it deserves to be planted more extensively. In no position is it seen to better advantage than when in large masses over bold pieces of rock. The shrub should not be pruned, but allowed to retain its natural habit, and will succeed in almost any soil. No plant is better adapted for such positions.

BERBERIS VULGARIS PURPUREIS.—This has deep-purple foliage of a very pleasing shade, and it bears bright-scarlet berries in autumn, succeeds best on

chalky soils, should be cut close to the ground every third winter, and the soil left undisturbed about the roots.

COLUTEA ARBORESCENS.— The Bladder Senna may be planted in the half-wild garden, and will succeed in almost any position and in any soil. Its yellow flowers in July are pretty, but the seed-vessels during winter are most effective; it should be pruned back hard annually. There are several varieties, each of which are equally well adapted for this purpose. Plant 3 feet apart.

CORNUS SANGUINEA (Dogwood).—Few deciduous shrubs are more easily grown or more effective during winter than the Scarlet Dogwood. It may be grouped in any position either in the gardens or outside when of any extent, and when space is no object the beds or groups can hardly be too large. The foliage attains a beautiful bronze tint during autumn, but unfortunately soon falls. The position should be open, and it is absolutely essential that the growths be cut to the ground annually the first week in April, bearing in mind that it is only the young wood which puts on its brightly-coloured robe in winter, and the more intense the cold the better colour will be the wood. Plant 3 feet apart. *Cornus sanguinea variegata* is a beautiful silver variegated form of the above, but not so vigorous. It is very fine for summer decorations; the ground requires to be well manured. Plant at a distance of 18 inches and prune annually. The scarlet wood, though small, is very pretty in winter, but

not showy enough in the distance. *Cornus alba Spathi* has beautiful golden foliage in the summer, but is too scarce and not vigorous enough to plant to any extent. Requires the same treatment as the above.

CORYLUS AVELLANA PURPUREA.—One of our best purple-leaved plants, especially so in early summer. Arrange to plant this near *Acer negundo variegata*, *Sambucus nigra aurea*, or both, and the effect will be good. It will succeed on almost any kind of well-trenched ground. Plant the shrubs 3 feet apart, and they will require little attention, but every fifth year the shoots should be cut clean to the ground, when the growth and foliage will be much more robust and telling.

COTONEASTER SIMONSII.—A strong-growing shrub, and suitable for making large groups; it is very effective during autumn and winter when studded with its red berries. It should be planted 3 feet apart and not pruned, but about every fifth year it should be cut close to the ground.

CYDONIA JAPONICA.—This well-known early-flowering shrub may be grouped in almost any position, but is seen to the best advantage when on raised ground or overhanging masses of rock. It should not be pruned, but allowed to retain its natural habit. Plant at a distance of 4 feet apart. The variety *carnea* is equally good, but bears more freely; the fruits make excellent preserve, while the flowers are a beautiful flesh colour. *C. Maulei* is quite distinct from the above, but quite as valuable, and flowers and fruits freely.

CYTISUS ALBUS MULTIFLORUS, the Common White Broom ; *C. scoparius*, Common Yellow Broom ; and the effective although newer variety, *C. scoparius andreanus*, are all delightful plants when extensively planted, not only when in flower, but their fresh-looking green wood is pleasing at all seasons. Plant early in April 3½ feet apart, using small plants. None of the Brooms like being cut back to the hard wood, but the young growths may be shortened back after flowering. *C. s. præcox* is perhaps the best of the whole family, flowering profusely, and is of good habit. It should be planted 4 feet apart.

SPARTIUM JUNCEUM (the Spanish Broom).—Flowers in early autumn and lasts a considerable time. Its bright-yellow blooms are very telling in the distance. Plant 4 feet apart, and prune after flowering.

DAPHNE MEZEREUM and the white variety *album* are among our earliest and most beautiful flowering shrubs. They should be planted 4 feet apart, either immediately after flowering or in very early autumn, both flourishing best on light soils.

DIMORPHANTHUS MANDSCHURICUS (syn. *aralia mandschurica*).—This fine tropical-looking plant, when planted in large beds, forms a magnificent feature during the summer months, and in the winter the stems when bare are both curious and interesting. It enjoys a deep rich soil, and is easily propagated from root suckers. Plant at a distance of 5 feet apart.

EUONYMUSES.—The true variety of *Euonymus alatus*

americanus must rank as one of the best plants for autumn effect. Words can hardly describe its beautiful tints. It is a slow grower, but will succeed on almost any kind of soil. Plant 3 feet apart. *E. europæus* (the Spindle tree) should be planted in large beds or masses at a distance of 4 feet apart, and pruned annually. It deserves a place by any woodland walk or in the half-wild garden. Thus treated it will fruit most freely, and its pretty pink berries hanging in thick bunches are sure to attract attention. The white variety, though as pretty, does not fruit so freely.

FORSYTHIA SUSPENSA.—This is most effective when planted in any position in the gardens or grounds. It makes a delightful bed when planted at a distance of 4 feet apart, and should not be pruned. *F. virdissima*, though not such a pretty kind as the above, is equally well suited; it flowers profusely. Both of these flower during March and April. The surface-soil should be pricked over every spring.

FUCHSIA RICCARTONI.—This charming old shrub makes magnificent beds in any part of the grounds. It should be cut down close to the ground every spring and receive a mulching of half-decayed manure. Thisis not planted half so largely as it deserves to be.

HYDRANGEA PANICULATA GRANDIFLORA.—This is perfectly hardy, and few flowering shrubs are more admired during autumn when in large beds. They should be planted in a deep rich soil, in a moist position, 3 feet apart, and pruned back hard annually at the end of March. We have some which were

planted sixteen years ago and have never once failed to make a splendid display. The surface-soil should be pricked over early in spring.

HIPPOPHÆ RHAMNOIDES (the Sea Buckthorn).—This will succeed well in any deep moist soil. Its beautiful grey foliage shows up well during summer, and when the male and female plants are mixed together the branches will be wreathed with clusters of beautiful orange-coloured berries during autumn and winter. Plant 5 feet apart and somewhat in the background. Very little pruning will be required, except to regulate the growths. Prick over the surface-soil annually. The Sea Buckthorn also lends itself admirably for planting by the sides of lakes and streams or at the back of rock-work.

HYPERICUMS.—*H. androsemum* grows to the height of 2 feet 6 inches, and is sure to be appreciated. Its flowers appear profusely during summer, and are followed by clusters of dark-brown berries. Plant 2 feet apart and prune close to the ground annually early in April. *H. calycinum* (the Common St. John's Wort) is partly evergreen and admirably suited for clothing banks or making beds where low-growing subjects are required; it will flourish anywhere, and should be cut close to the ground with the shears annually. *H. moserianum* is one of the best of this class of plants, but needs some protection in cold districts. *H. patulum* is also an excellent variety, and not so extensively planted as it deserves.

KERRIA JAPONICA.—A charming compact-growing shrub, with single bright-yellow flowers. It is suit-

able for small beds or grouping in the front of shrubberies. There is a variegated variety which is liable to revert back to the green form, but such shoots should be kept cut out. Very little if any other pruning is required ; a poor, light, sandy soil suits it best.

LEYCESTERIA FORMOSA.—A delightful shrub for massing in the wilderness or wild garden ; requires a deep rich soil. Its large purple and white flowers in August and September are very pleasing, and during autumn and winter the wood is very conspicuous, being bright green. It should be pruned back annually, and the ground pricked over in spring. Plant at a distance of 4 feet apart.

LONICERA (HONEYSUCKLE), LARGE DUTCH.—To see this beautiful climbing plant at its best, make a mound of tree roots, fill in with soil, and plant at a distance of 4 feet apart. At first the growths will require to be trained and nailed over the roots, and when once covered they will need little other attention. Large beds planted in this way will be sure to be highly appreciated, if for nothing else, for the fragrance of the flowers.

LYCIUM BARBARUM.—Commonly called Box Thorn or Tea Tree ; should be planted in large groups where it can ramble away near the water or overhang large roots of trees or boulders. Except to regulate the growths once a year, it will give no further trouble. There are several other varieties well suited for the same purpose.

RHUS COTINUS (Venetian Sumach), the Smoke Plant

or Wig Tree, is one of the most effective shrubs for this purpose. A large mass of this, with its delightfully-tinted foliage in autumn, is a pleasing picture, and is well adapted for any position or any part of the garden. It should be planted in deep but poor soil, at a distance of 5 feet apart, and slightly pruned annually early in April; it requires no other attention. *R. typhina* (the Stag's Horn Sumach) is one of the commonest plants grown, with not much beauty, except when planted in large beds and cut close to the ground annually. When treated in this way few things are more attractive; it then throws up strong, vigorous shoots, with fine tropical-looking foliage, which is highly attractive during summer, and the colouring of the foliage during autumn is most conspicuous, also of the wood during winter. When stripped of its foliage it is distinct and pleasing; it will flourish in any soil. Plant 3 feet apart, and it is easily propagated by root suckers.

ROSA RUGOSA.—This charming Rose, when planted in the wilderness, wild garden, or around the lake, in large beds or masses, is always seen to advantage; it has fragrant flowers in summer, and large, highly-coloured fruit in autumn. Place it in the forefront of flowering plants. Plant in deep, well-enriched soil, at a distance of 4 feet apart, and prune, like other Roses, annually. The white variety is equally well adapted, and may be mixed with the above.

ROSA BENGALE HERMOSA, belonging to the monthly or China section, is the freest flowering of all Roses that I am acquainted with. In mild autumns it flowers

freely until Christmas when planted in sheltered positions. It enjoys a rich soil, and should be pegged down annually, merely thinning out the growths in spring. May go in any part of the garden or grounds, and it is perhaps unequalled for covering southern slopes.

RUBUS.—Nearly the whole of these may be freely grouped. I will mention those only which I have found do best: *R. biflorus* (the white-washed Bramble) is one of the most distinct and effective of the whole class. During winter it looks as if it had been painted white, and when planted close to the Scarlet Dogwood is exceedingly attractive in the distance. It succeeds best on a good deep loam, and the old growths should be cut out every winter. Plant at a distance of 4 feet apart. *R. canadensis rosea* (the flowering Raspberry) is invaluable for making large beds. It continues to produce its highly-coloured flowers freely all through the summer and autumn. Plant 3 feet apart and thin out the old growths annually. *R. fruticosus roseo flore-pleno*, also the white form *alba* (the double-flowered Blackberry), may be grouped on slopes. The old growths should be cut out annually, and plant 4 feet apart. *R. laciniata* (American Blackberry) is the best of the fruiting kinds for this purpose; it produces large crops of valuable fruit every year. Treat in the same way as advised for the above. *R. phœnicolasius* (the Japanese Wineberry). This somewhat new form of Rubus is one of the best plants for this kind of planting. It bears freely, and the fruits are much appreciated by many, and its bright canes during

winter produce a most pleasing effect. It is a strong grower when planted in good soil at a distance of 5 feet apart. Remove all the old canes during winter. The ordinary garden forms of Raspberry also make fine groups in the unkept parts of the grounds. The old growths should be pruned out each autumn, when the young canes have a warm and pleasing appearance.

SALIX. — Many of the Willows form splendid features during the winter months. Perhaps on a fine winter's day large masses of the highly-coloured barked Willows can hardly be excelled for their beauty and rich colouring, but, of course, are only adapted for water-side planting or low, wet, marshy land. Nothing is more readily propagated from cuttings than these. They should be planted 3 feet apart, and the young growths pruned hard to the ground annually the last week in March, for it must be borne in mind that any wood more than twelve months old has very little, if any, beauty in it. The three best kinds I know for the beauty of their wood are *Salix vitellina*, the golden-barked Willow, *S. cardinalis* (which has bright-red bark), and *S. purpurea*, as its name implies, is purple. Though not so effective in the distance as the foregoing, it is well worthy of cultivation. I will mention one other Willow only which should be planted for its summer beauty, that is *S. rosmarinifolia*. Its beautiful grey foliage much resembles that of Rosemary. It is not so robust a grower as many of the family, and there is no beauty in the wood during winter, consequently

the growths should only be shortened back to within three eyes of the base annually.

SAMBUCUS.—The Elder family, like the preceding, is a large one, and fortunately adapts itself to almost any soil and situation. First and foremost must be mentioned *Sambucus nigra aurea*, a bold and beautiful tall-growing Elder, and its rich golden foilage produces a marvellous effect in the landscape. Large bold masses of this should always be used where practical in a half-open position. Hard pruning in this case must be carried out, cutting the summer's growth close to the ground annually in the last week of March. The effect of the greenish-grey wood in winter when treated in this way is pleasing; the silvery variegated form, though not so showy, is worthy of a place where the grounds are extensive. Should be planted on poor soil in an open position, and pruned hard annually. *S. n. laciniata* (the Parsley-leaved Elder) is a beautiful and distinct form of the cut-leaved Elder, which attains its true character and makes splendid beds; it requires the same kind of treatment as to pruning as the above. *S. racemosa serratifolia aureis* is unquestionably the finest variety in cultivation; but unfortunately is not so robust as many of the others, and it is far too rare and expensive at present to plant to any extent. It does best on a deep rich soil in a fully-exposed position, and prune back hard early in April. The cuttings should be propagated in pots in a cold frame. The whole of the Elders should be planted 3 feet apart.

SPIRÆAS.—Another beautiful and interesting class for effect either in summer or winter, when sufficiently large plantations are made and properly treated. The whole of these should be planted at a distance of 2 feet apart, on deeply-trenched and well-manured ground. The North-West American *Spiræa Douglasi*, though one of the most common, is unsurpassed for its distinct and beautiful wood during autumn and winter, but the only way to see it at its best is to cut it clean to the ground every year during the last week in March. It will then produce young strong growths from 4 to 5 feet in height, each of which will furnish fine heads of deep-pink flowers during summer, and its beautiful, warm-looking, nut-brown wood in winter is among the most richly toned of all the barks which are used to produce effect, and yet when grown in the ordinary way, and partially pruned down, as we in nearly all cases see it, it produces miserable flowers, and the wood is uninteresting. About every third or fourth year after pruning give a surface dressing of half-decayed manure and loam in equal proportions. The prunings should be tied up and saved for staking purposes; I know of nothing to equal them for all kinds of slender-growing plants. *S. callosa* also makes a fine bed, and is very effective during late summer; its large heads of deep-pink flowers render it most conspicuous; they are produced when the others are past their best. It should be cut to the ground every third year. *S. prunifolia flore-pleno* is a very beautiful form, flowers freely in March and April,

SPIRÆA CANESCENS (*syn. flagelliformis*).

and its foliage assumes lovely tints in the autumn. It is of very graceful habit, and well suited for banks or overhanging rocks. It should be moderately pruned each year, and when it attains to a leggy appearance cut hard back. *S. canescens* (syn. *hypericifolia*) makes splendid beds owing to the pretty arrangement of the foliage. This should be pruned to the ground annually.

SYMPHORICARPUS RACEMOSUS (the Common Snowberry) is generally regarded as an almost worthless plant, but when in a sunny open position on well-trenched land and cut close to the ground each year, large beds are most attractive in autumn and winter, as by such treatment the growths will become thickly studded with pure white fruits. *S. variegatus* is a very pretty, somewhat slow-growing golden-leaved shrub, and should be planted in an open position. It has a tendency to revert back to the green form. Shoots of the type should be kept cut away. This should be slightly pruned in spring, and when leggy cut to the ground.

ROSA RUBIGINOSA (the Sweet Briar). — Every woodland walk, wilderness, or wild garden should have one bed or more of this fragrant plant. The delicious scent emitted from its foliage in spring after showers is very welcome, and the bushes, when heavily laden with the bright-red fruits in autumn and winter, are most effective. This should be planted at a distance of 3 feet apart in well-trenched and heavily-manured ground, and clipped over every spring.

EVERGREENS

BERBERIS (syn. MAHONIA) AQUIFOLIUM, or Holly-leaved Barberry, is too well known to need much description. It is one of the most useful and accommodating of shrubs, and will succeed in almost any soil, and either in the open or under the shade of trees is quite at home. For clothing banks few things can equal it. It should be planted when in a small state 18 inches apart, choosing the beginning of April for the purpose. It may be allowed to take care of itself when once established.

BOX.—The entire Box family is excellent for grouping when the soil is suitable, but it is waste of time to attempt planting it in large quantities unless the position and soil agree with it. A light surface, with a chalky sub-soil, is what it enjoys.

LAURELS.—The two best Laurels are *Cerasus Laurocerasus caucasica*, the hardiest of the whole family, and *rotundifolia*. The former may be severely pruned and is excellent for clothing large bare places, mounds, or banks. *Rotundifolia* is a splendid variety with larger foliage, but not so hardy. The ground in which these Laurels are to be planted should be trenched or bastard trenched, and small plants be planted 3 feet apart all ways. To keep them in condition, prune hard down during the growing season twice, if not three times, when they will remain in good health for many years. *Cerasus lusitanica* (Portugal Laurel) is happy in heavy soils, and its beautiful dark-green leaves are very telling. This

should also be planted in trenched ground at a distance of 5 feet apart, and pruned once only during the year. So treated, splendid beds are formed when suitable positions are chosen.

COTONEASTER BUXIFOLIA and WHEELERI, very nearly allied to each other, are fine strong-growing evergreens for almost any soil. They are well adapted for making beds, covering large boulders or the old roots of trees. *C. buxifolia* is a graceful and pleasing plant when covered with its bright berries, and allowed to assume its natural habit. Plant 3 feet apart, merely thinning out the growths occasionally.

COTONEASTER MICROPHYLLA.—A very charming shrub, and when planted on a raised position, or on overhanging rocks, tree roots, and such like, forms beautiful masses, especially when thickly studded with its crimson berries. It sometimes becomes badly infested with brown scale, but this is easily got rid of by applying a strong solution of soft soap and water with a syringe.

ILEX AQUIFOLIUM (the Common Holly).—The Holly is one of the very finest of our evergreens for bold planting. Fortunately, it is one of the few evergreens that will succeed and grow luxuriantly under the drip of trees, where many other things fail. Large breadths of Holly in good health are a pleasure to look at at all seasons of the year, particularly when well laden with bright-scarlet berries. The Holly is seen at its best on light, well-drained soils, that of a stiff clayey nature (especially

so when water-logged) being the most unfavourable to its growth. Fortunately, it will adapt itself to any mode of pruning, but unquestionably the best way to treat it is to plant in large bold clumps, allowing it to grow away at its own sweet will. Many of the more uncommon varieties, both green and variegated, make highly attractive groups and beds, and where expense is of little object should most certainly be planted.

RHODODENDRONS.—Of course, one must possess a suitable soil to plant the more beautiful varieties in any quantity; nevertheless, the common *R. ponticum* and hybrid seedlings, of which there are now fortunately a great variety, will succeed in nearly all soils free from lime. The ground should be thoroughly broken up during autumn, and the planting done 4 feet apart in the spring. The seed-vessels should be picked off after flowering, and the plants are much benefited by an occasional top-dressing of road grit and leaf soil. Even here on a cold London clay, where the ground has been well drained and treated as above, they succeed very well.

RUSCUS ACULEATUS (Butcher's Broom), a native of this country, is invaluable for planting in masses in shady spots. It appears to enjoy the drip from other trees, and is very accommodating as to soil and position, but likes to remain undisturbed. *Ruscus racemosus*, which is a native of Portugal, and commonly called the Alexandrian Laurel, is unquestionably the best of the Ruscus family, and its

growth very much resembles that of the Bamboo. It is rarer than the commoner kinds, but it deserves extended cultivation, being worth a good position in any part of the gardens or grounds. It berries freely in some seasons. It lasts remarkably well, and is very handsome in a cut state. It enjoys a deep rich loam, but will not fail to give a good account of itself on any soil.

JUNIPERUS SABINA TAMARISCIFOLIA is a beautiful shrub for the fringe of a plantation, it is of robust growth, and the best of the Junipers for this planting.

TAXUS BACCATA AUREA (the Golden Yew) is a most effective evergreen shrub. It should be planted in open sunny positions. Without doubt it has no rival, being the most useful and telling golden evergreen shrub we have. It is of somewhat slow growth, consequently should be planted fairly thick. Like the Common Green Yew, it succeeds in almost any kind of soil, but it colours best on a deep yellow loam in a thoroughly exposed position.

ULEX EUROPÆUS (Common Gorse or Whin).—This common British plant needs little description here. When seen in its wild state, where it is thoroughly naturalised, it presents a most charming sight. Half-wild patches of land may easily be made suitable for it at little expense. During winter the land should either be ploughed or dug, and the seed sown during April, either in drills or broadcast, and the seedlings thinned to a fair distance

apart during the following spring. When once thoroughly established, little trouble will be experienced in keeping the ground well stocked. Occasionally, when the old plants become leggy, they should be cut close to the ground immediately after flowering, and in a short time these will break away freely from the bottom. *Ulex europæus flore-pleno*, an invaluable plant for all kinds of ornamental planting, is, unfortunately, very expensive, as it has to be struck from cuttings and distributed in pots; nevertheless, it is a most important plant to have. The flower is a much brighter yellow than the common form, is produced more freely, and lasts a considerable time in beauty. It is very suitable for either making beds or forming large patches of colour behind rocks and among the fissures of the rock garden. It should be planted about 3 feet apart, in fairly good ground, and about every fifth year pruned down close to the ground.

VIBURNUM TINUS (*Laurustinus*).—A beautiful evergreen flowering shrub, and generally well known, but unfortunately it is not sufficiently hardy to plant in many parts of the country, especially in exposed positions. It will grow and flower profusely in very shallow and, indeed, in almost any soil. It makes a handsome bed, and should be planted 4 feet apart.

The Hon. Vicary Gibbs has taken keen interest in the tree and shrub planting in the gardens of Aldenham House.

CLEMATIS MONTANA OVER ROUGH WALL.

CLEMATIS MONTANA OVER ARCHWAY.

THE USE OF HARDY CLIMBING SHRUBS

THE best and best known of our good hardy climbing shrubs are by no means neglected, but yet they are not nearly as much or as well used as they might be. Such a fine thing as the easily-grown *Clematis montana* will not only cover house and garden walls with its sheets of lovely bloom, but it is willing to grow in wilder ways among trees and shrubs where its natural way of making graceful garlands and hanging ropes of bloom show its truest and best uses much better than when it is trained straight along the joints of walls or tied in more stiffly and closely. Even if there are only a few stiff bushes such as Gorse or low Thorns to support and guide it, it gladly covers them just as does the Traveller's Joy (*Clematis Vitalba*) of our chalkland hedges. This also is a climber that, though a native plant and very common in calcareous soils, is worthy of a place in any garden. *Clematis Flammula* is another of the family that should be more often treated in a free way, and grown partly trained through the branches of a Yew or an Ilex. The less-known *Clematis graveolens*, with yellow flowers and feathery seeds, and the fine October-blooming *C. paniculata*, make up five members of one family, apart from the large-flowered Clematises, that all

lend themselves willingly to this class of pictorial treatment.

One of the most important of our climbing shrubs, the *Wistaria*, makes grand growth in all the south of England. This also can be used to excellent effect trained into some rather thinly-furnished tree such as an old Acacia. Its grey snake-like stems and masses of bloom high up in the supporting tree are shown to excellent effect. This is also a fine plant for a pergola. A few plants growing free and rambling full length would, after the first few years, when they are getting old, cover a pergola from end to end. The piers or posts could also be covered with the same, for though the nature of the plant is to ramble, yet if kept to one stem and closely pruned it readily adapts itself to pillar form, and bears a wonderful quantity of bloom.

Among the Grape Vines there is a great variety of ways of use other than the stiff wall training they generally receive. If they are wanted for fruit they must be pruned, but most outdoor Vines are grown for the beauty of their foliage. Here is another first-class pergola plant, making dense leafy shade, and growing in a way that is delightfully pictorial. Nothing looks better rambling over old buildings. Now that so many once prosperous farms are farms no longer, and that their dwelling-houses are being converted to the use of another class of occupier, the rough out-buildings, turned into stabling, and adapted for garden sheds, often abut upon the new-made pleasure-garden. This is the place where the

Vines may be so well planted. If the main stem only is trained or guided it is well to leave the long branches to shift for themselves, for they will ramble and dispose themselves in so pictorial a way that the whole garden is bettered by their rioting grandeur of leaf mass.

Aristolochia Sipho, with its twining stems and handsome leaves, will, like the Vine and the Virginian Creeper, answer to all these uses of jungle-like growth among trees and shrubs and free climbing in hedge, over pergola or rough building.

The employment of the climbing and rambling Roses is also now understood for all such uses, and the illustration shows the value of the Dutch Honeysuckle for this purpose.

A rough hedge containing perhaps only a few Thorns and Hollies and stub Oaks, and a filling of Wild Brambles, may be made glorious with the free hardy climbers just guided into the bushes and then left to ramble as they will.

In the growth of the rarer and most distinct and beautiful of climbing shrubs one must in the main be guided by the natural surroundings of soil and shelter or by climatic conditions. In the cold midland and northern districts of England we have seen common Laurels and many Roses killed to the ground during severe winters.

In Hampshire, Devon, and Cornwall, and in many other isolated and sheltered nooks near the sea in England south of the Thames, many so-called cool greenhouse plants often grow and thrive luxuriantly

in the open air. This is also true of many localities in the south and west of Ireland, such as Fota, Cork, Bantry, and Tralee, where New Zealand, Japanese, Californian, and many Chilian shrubs are quite happy in the open air. Nearly all visitors to Glengarriff notice the luxuriance of the Fuchsias, which, not being cut down there every winter by severe frosts, assume more or less of a tree-like aspect, and are literally one mass of brilliant coral-red flowers during summer and autumn. But it is even more wonderful to see there growing up the front of the hotels and elsewhere such plants as *Maurandya*, *Lophospermum*, *Mikania*, and Cape Pelargoniums year after year. But, apart from mild climates, aspect has an enormous effect on many climbing shrubs, and especially on light dry soils. *Lapageria*, for example, prefers a northern exposure, and the same is true of *Berberidopsis* and in the case of the familiar *Fatsia* (*Aralia*) *japonica*. Many climbers and trailers, again, are hardy on north or north-western walls that are ruined by bright sunshine after frost, which is often experienced on south and especially south-western exposures. Even when climbers like *Wistaria*, *Jasminum nudiflorum*, *Ceanothus*, *Cydonia*, and many others are perfectly hardy on sunny walls it is often a great advantage to train a few branches over the top of the wall to the shady side, as in these cases there is a week or ten days or more difference in the time of blooming, and so an agreeable succession is obtained.

In planting both walls and pergolas there is danger in planting too thickly, and in planting too hurriedly or without sufficient preparation. We all must perforce often do the best we can rather than the best we know. Large-growing, permanent shrubs, such as *Cydonia japonica*, *Wistaria*, and *Magnolias*, which may remain in the same spot for twenty years or more, often fail through starvation, and in any case never attain their full luxuriance and beauty if cramped and stunted during the first few years after planting. Again, it must be remembered that both wall and pergola creepers often suffer from dryness during the summer and autumn months, and provision should be made for necessary mulching and watering.

There is one important point that must be attended to in the planting of anything of which the general hardiness is not fully assured, and that is, never plant late in autumn. The golden rule with all half-hardy things is to plant well in April or May, after all danger from severe frost, &c., is over, so as to allow the plants a long summer and autumn season of root and top-growth before the stress and strain of winter weather come upon them. In this way many plants will succeed perfectly in establishing themselves that would at once die off if planted out in October or November.

ABELIA.—*A. floribunda* is a Mexican plant. Mr. Burbidge writes in the *Garden*, April 14, 1900, p. 272: "I have seen it very handsome in flower on a low wall at Mount Usher, county Wicklow. Its

pendent flowers in axillary clusters are of a rich purple red, and remind one of some Fuchsias." *A. rupestris*, a Chinese plant, is very pretty, as also is *A. triflora* from North India.

ABUTILON.—Several of the Abutilons are sufficiently hardy to thrive on walls or in borders near to heated plant-houses. Mr. Burbidge writes in the *Garden*: "I have seen *A. striatum*, *A. vexillarium*, and *A. vitifolium* grow and bloom for years outside. The last-named forms a spreading bush 10 to 13 feet high in South, West, and Eastern Ireland. It has leaves somewhat resembling those of the Grape Vine, and clusters of pale-lilac, mauve, or lavender-tinted flowers that remind one of those of *Meconopsis Wallichi* in shape, size, and colour. *A. vitifolium* comes from Chili, and enjoys shelter and ample root moisture, being apt to suffer from drought near walls, otherwise it grows well thereon." *Abutilon vexillarium*, when afforded the protection of a south wall, blooms for eight months out of the twelve, bearing on slender, curving shoots its handsome, bell-shaped flowers with their crimson sepals, yellow petals, and protruding dark-brown stamens well into the month of December should no severe frost occur. Florist's varieties of the Abutilon, such as Boule de Neige, also do well on sheltered walls.

ADLUMIA CIRRHOSA.—This grows quickly, and the fern-like leaves, covering almost the twining stems, possess much beauty; the flowers are white. A biennial, but sows itself freely. North America.

AKEBIA QUINATA.—A most distinct Japanese

creeper with five-lobed leaves and twining stems; although generally grown in a greenhouse, where it flowers in January or February, it is quite hardy in mild sea-shore places, and bears its monœcious flowers in April or May. The rich wine-purple flowers are borne in axillary grape-like clusters, and their translucent petals are very beautiful as seen between the eye and the light. It likes a rich, deep, loamy soil, and is increased by suckers or layers. Although introduced to our gardens from Chusan in 1845, it has never become very abundant, but it deserves a place for its distinctive character.

ALOYSIA CITRIODORA (Sweet Verbena).—Another popular name for the *Aloysia* is Lemon plant; it is a fragrant pale-green leaved bush, not very hardy, and therefore best placed when against a sunny wall. Except in quite the south of England and Ireland, it is generally wise to cover over the stems with a straw mat and heap ashes over the roots. It is often seen as a large bush against the sea. We have seen it thus on the Carnarvon coast. Chili.

AMPELOPSIS.—Now included with the Vines (*Vitis*).

APIOS TUBEROSA.—This has pea-shaped violet-scented flowers. It is sometimes pretty rambling over a shrub. North America.

ARISTOLOCHIA SIPHO (Dutchman's Pipe).—Frequently planted against a wall; its leaves are very large and handsome, and the dull-coloured flowers, owing to their shape, have given rise to the popular name.

ATRAGENE ALPINA.—A hardy wall climber, and

known under the names of *Clematis cærulea* and *C. alpina*. It enjoys a lime soil. A native of Europe.

AZARA.—The best known of these is *A. microphylla;* it is not one of the hardiest of shrubs, but in many gardens, especially where sheltered and by the sea, it covers much space with dense glossy leaves; the flowers are white, small, and give place to orange-coloured berries in autumn. It is quite a shrubby wall plant.

BENTHAMIA FRAGIFERA.—Now known as *Cornus capitata*, but in gardens its old name will long be retained. In Devon, Cornwall, and in Wicklow, Cork, and Kerry, and elsewhere in Ireland, this fine shrub flowers and fruits luxuriantly as a bush on the border or lawn, but in less favoured places it needs the warmth and shelter of a wall. It is a native of Nepaul, and is readily increased from home-grown seeds, and the plant, like all its allies, is a rapid grower in any deep, rich, loamy soil. Quite small bushes of this plant and the common *Arbutus Unedo* are often very handsome as seen laden with fruit in South and Western Ireland.

BERBERIDOPSIS CORALLINA.—Mr. Burbidge writes in the *Garden:* "The finest specimen of this beautiful and distinct evergreen climber I ever saw was on the stable wall at Lakelands, Cork, when that noble place was in the hands of the late Mr. William Crawford, a great lover of garden vegetation. It is a native of the Chilian Andes, introduced in 1862. It likes a deep peaty soil or loam and leaf-mould on a moist bottom, and, like the *Lapageria* and its dwarf

cousin *Philesia*, it enjoys a northern or shaded aspect, rarely thriving for long together in full sunshine. Its flowers resemble those of the Berberis, but are much larger, have pendent stalks, and are of the brightest coral-red or blood colour. It grows and flowers here in a shaded corner under an ivy-topped wall."

BILLARDIERA LONGIFLORA.—This is the Apple Berry of Tasmania, and is of elegant twining habit, its greenish-yellow flowers, which are not very showy, being succeeded by handsome blue berries that are very ornamental, and are similar in shape and size to Fuchsia fruits. The plant is closely related to the *Pittosporums* of New Zealand, and grows 2 or 3 feet in height. There are two or three other kinds, but none prettier than *B. longiflora*. It grows best in moist peat and sandstone, at the foot of a half-shaded wall.

BIGNONIA RADICANS.—This is the hardiest of the Bignonias. It clings to walls, and there is much beauty in the orange-scarlet, trumpet-shaped flowers, which are in clusters. It grows to a considerable height. North America.

CALYSTEGIA.—Also known as Convolvulus. *C. pubescens fl. pl.*, the double Birdweed, is more useful for rough stumps than walls, but may be included; the flowers are double, of rosy colouring, and large, and appear during the summer and into the autumn. It is best in warm, well-drained soil.

CAMELLIA. — Mr. Scrase-Dickins writes in the *Garden*, March 30, 1901, p. 227, as follows about

these little-understood hardy shrubs: "The best Camellias for planting out of doors in the open air are those which bloom late and start late into growth, such, for instance, as *Chandleri elegans* or *Anemonæflora*; the varieties with broad roundish leaves appear to grow in more robust fashion than those having narrow pointed ones with a serrated edge, though the latter will make sometimes very compact bushes. It is possible that the sorts with dark-red flowers are hardier than those with pink. The old double white seems to stand the cold well enough, but it hides its flowers rather too much among the foliage to make any effective display of them, though in this way they are often secured from frost or bad weather and made serviceable for cutting. To train against a trellis or wall *Doncklaarii* is very good, and next to reticulata one of the most beautiful when well grown, blooming so freely.

Camellias appear to grow in almost any aspect, but are naturally sun lovers; and though preferring peat, they will do in most other soils, provided that there is no lime present. The points of the young roots are very sensitive to drought, so should be protected until well established, by light mulching or a surrounding growth, from the risk of being withered up by a fierce sun striking the ground in which they are starting. Unlike many other shrubs, they seem to have the advantage of being exempt from the destructive attention of rabbits; perhaps when snow is on the ground they might be barked,

but I do not remember to have noticed it. Apart from the question of varieties, it may be well to draw attention to the fact that only strong healthy plants should be turned out, for sickly specimens from a conservatory or greenhouse are very slow indeed to make a start, and will remain sometimes for an astonishing number of years in almost the same pitiable state."

CEANOTHUS.—Beautiful wall shrubs. They cannot be regarded as quite hardy, but *C. azureus* in a garden near London has mounted almost to the chimney stacks; a surface of foliage, and in the appointed season pale-blue flower clusters. The soil is light and the aspect due south; and in cold, sunless places the Ceanothuses, it is well to remember, utterly fail. A warm soil and sunny place suit the shrubs well. Gloire des Versailles, Lucie Simon, and *pallidus* are amongst the best of the others. Of other species, *C. veitchianus*, deep blue, is very beautiful; and *C. dentatus* and *C. papillosus* are also noteworthy.

CHIMONANTHUS FRAGRANS (Winter-sweet).—The variety *grandiflorus* has larger flowers and of a clearer shade of citron yellow than those of the type, and though the plant is bare of leaf the blossoms make a brave show, and may be descried against a well-toned brick wall from some little distance. It is just as well to bear in mind that this is one of the shrubs which bloom on the young wood, and any pruning or cutting out of useless branches that may be necessary should be done in early spring when the flowers are over, for if it be delayed there will be

no flowers next year. It may be raised from seed, but seedlings vary greatly.

CHOISYA TERNATA (Mexican Orange Flower).—Very vigorous, shrubby, glossy, green-leaved plant; rather tender, but quite happpy in northern gardens if not very exposed. Its clusters of flowers are very sweet and white.

CLEMATIS.

COTONEASTER.

ECCREMOCARPUS.—Beautiful climber for wall, arch, or pergola, with reddish flowers. Protect the roots by coating the soil above them with ashes or some protective material.

EDWARDSIA (SOPHORA) TETRAPTERA.—This is called the New Zealand Laburnum. A tree in its own country, but a shrubby wall plant here. *Grandiflora* is the best variety.

ESCALLONIA.

FUCHSIA.—The hardy Fuchsias are almost unknown, though amongst the most beautiful of hardy shrubs. My favourite is *F. Riccartoni*, but this often makes a good hedge. Very charming also are *F. coccinea*, *F. corymbiflora*, *F. globosa*, *F. macrostemma*, *F. microphylla*, *F. splendens*, and *F. thymifolia*.

HABLITZIA TAMNOIDES.—Better, perhaps, for arch, pergola, or tree stump than a wall, but in some cases it may be placed there. It is a vigorous climber, with misty masses of greenish flowers in summer and autumn. Not often seen.

HEDERA (Ivy).—The Common Ivy when growing in an exposed position will often acquire a rich bronzy

hue during winter, but in this respect individual plants vary a good deal, the smaller-leaved forms being as a rule the richest in colour.

The most marked in this respect, and one that from its neat, prettily-lobed leaves is well suited for use in making up button-holes, sprays, &c., is the variety *atropurpurea*, whose distinctive character is far more marked in winter than in summer. *Hedera Helix minima* must not be confounded with *H. H. conglomerata*, though at a certain stage of growth there is some similarity. A three-year-old specimen differs from the freer *conglomerata* form in that it grows more flat both as regards the twigs and the leaves on the twigs. It has more shining foliage of a deeper and more sombre green, with pleasing clouded tints, and further, as the name would suggest, it is a smaller plant in all its parts. It is a beautiful creeper for positions on the rock garden, and is one of the best surface plants, as through it bulbs may spear their growth and flowers without injury. *H. H. pedata* and *H. H. gracilis*, both charming varieties of the small-leaxed Ivies, should be in every collection.

The uses to which Ivy may be put are innumerable, and with the many beautiful varieties that are now to be obtained their sphere of usefulness has considerably extended. One of the most picturesque methods of growing Ivy is to allow it to clamber over tree stumps placed here and there in suitable parts of the garden. Ivy banks also are very charming, and for carpeting the bare ground beneath the spreading branches of large trees nothing could be

more suitable. For the latter purpose the shoots should be pegged down and kept in position so that they may take root. Suitable varieties for this purpose are *H. dentata, H. rægneriana, rhombea, obovata, himalaica, pedata, palmata, lobata,* &c.

INDIGOFERA GERARDIANA.—During the late summer and early autumn this leguminiferous shrub is one of the most attractive of those that are then in flower. Its finely divided pinnate leaves are of a rich deep green, and almost fern-like in grace and luxuriance. It is, indeed, worth growing for their sake alone. About the end of June it commences to flower, produces its flower-spikes in the leaf-axils, and continues to do so until the middle of September. The flowers are pea-shaped, and borne on spikes 4 to 5 inches long. The colour is a bright rosy purple. The species is a native of the Himalaya, and its stems do not survive winters of even moderate severity. The root-stock is, however, perfectly hardy, and it sends up a thicket of young growths every spring 2 to 4 feet long, which flower the same summer. It is not suited for growing in large masses by itself, because it starts rather slowly, and the season is advanced before the space the plants occupy becomes furnished. But it is very suitable for the herbaceous border, or, still better, as an undergrowth beneath groups of taller, thinly-planted shrubs. It is happy also against a wall. Also known as *I. floribunda.*

JASMINUM.—The White Jasmine (*J. officinale*) is too well known to describe. It is one of the best of

CAMELLIA, LEAF AND FRUIT (*outdoors Cheshire*).

DUTCH HONEYSUCKLE ON WALL.

the cheaper wall climbers. *Affine* is the best variety; it has larger flowers. *J. humile* (*revolutum*), although an Indian species, will succeed against a wall; it has yellow flowers and is evergreen. *J. fruticans*, another bushy species, may also be grown; its flowers are yellow. Of course, the beautiful, fragrant, yellow-flowered *J. nudiflorum* will not be omitted; it is bright with colour in winter.

KERRIA JAPONICA.—Sometimes grown against a wall, but an excellent bush for grouping, except in very cold and exposed gardens. The flowers are yellow and produced abundantly. It should be more grown. The double variety, *K. j. flore-pleno*, is frequently seen against cottage walls, and making a cloud of yellow from the double rosette-like flowers in early summer.

LONICERA (Honeysuckle).—This is too well known to describe. The Honeysuckle of the hedgerow is as familiar as the Poppy of the cornfield. The common native Honeysuckle is *Lonicera Periclymenum*, the best variety of which is *serotina*, or late Dutch; it flowers into the autumn, and is of redder colouring. *Belgica* is the Dutch Honeysuckle and is of strong growth. *L. Caprifolium* is not a true native, but has become naturalised. *Major* is a distinct variety. Then there are the evergreen Trumpet Honeysuckles (*L. sempervirens* and varieties, *minor* being the best known; the flowers are scarlet and yellow). *Plantierensis* is a good hybrid with larger flowers. The Trumpet Honeysuckles are not so robust and free as the late Dutch, for example. The well-known varie-

gated Japan Honeysuckle, *L. japonica aureo-reticulata*, should not be planted much ; its small, green, yellow-netted leaves are pretty, but one quickly tires of their colouring. *L. etrusca*, orange yellow, and *L. flava*, which must have a warm place, may also be mentioned. Certain species are quite bushy in growth. *L. tomentella* has small pink flowers in July. *L. fragrantissima* blooms in winter and is a delightful wall Honeysuckle ; its small white flowers are very fragrant. *L. Standishii* is also sweet scented. A plant or two of either kind near the windows is very pleasant on sunny winter days. *L. tatarica*, another bushy Honeysuckle, has rose-coloured flowers in early summer.

LOPHOSPERMUM SCANDENS. — A slender, pink-flowered climber, but only for warm wall.

MAGNOLIA.—*M. grandiflora* is generally grown against a wall. The large, glossy, green leaves and big, creamy, fragrant flowers are very handsome. *M. conspicua* I have also seen very beautiful against a wall, a mass of white in late spring. The flowers in this position are less likely to get damaged by frost and rain. Its varieties may be used in the same way, but the type is the best.

OLEARIA.

PASSIFLORA CÆRULEA.—Few climbing plants are more fascinating than the blue Passion Flower. It is, with its bluish flowers and orange, egg-shaped fruit, most happy against a warm wall, and is not the hardiest of climbers. The white variety, Constance Elliot, should be grown also.

POLYGONUM BALDSCHUANICUM OVER FIR.

PRUNUS TRILOBA AGAINST SUNNY WALL AT KEW.

PIPTANTHUS NEPALENSIS (Nepaul Laburnum).—This is a shrubby wall plant, and not a very important one. Its yellow flowers remind one of those of the Laburnum, and are borne in clusters.

POLYGONUM BALDSCHUANICUM.—A beautiful shrubby climber, with clouds of white, pink-tinted flowers in summer and autumn. An illustration shows it clambering into a Fir tree near the rock garden at Kew. I have seen many poor forms in gardens, seedlings, and therefore to keep the true type, it must be increased by cuttings. If frost cuts the stems down in winter, new growths spring up in the following year. Its graceful flower masses are useful in the house. *P. molle* is not unlike it, but there is considerable difference between them.

PUNICA.

PYRUS.—The Pyruses are described elsewhere in this book. *P.* (*Cydonia*) *japonica* and its many beautiful varieties and *P. Maulei* are, however, more frequently grown against walls than any other members of the same family. *Prunus triloba* is an excellent wall shrub.

ROSA (Rose).

RUBUS.

SMILAX.—This group is not common in gardens, but is interesting. They are a change from the repetition of a few common things. *S. rotundifolia* is a very handsome large-leaved Smilax with shiny foliage, now and then met with as *S. laurifolia* or *S. latifolia*, from which, however, according to Mr. R. Irwin Lynch, of Cambridge, it is distinct. All the kinds of hardy Smilax form handsome leafy creepers

for walls, but in our climate they rarely produce the rich clusters of red berries that often render them so attractive abroad.

SOLANUM. — *S. jasminoides* is the most popular flowering climber of the south-west, producing its white bloom-clusters for many months in succession. It is classed as deciduous in botanical dictionaries, but is rarely bare of leaves, except after severe frosts in the early months of the year. *S. crispum* and *S. Wendlandi* will also succeed in mild counties; the latter has very large bluish flowers.

SOLLYA HETEROPHYLLA.—This is the dainty little Australian Bluebell Creeper, and belongs to the shrubby Pittosporums, growing from 2 to 6 feet in height. It was formerly much valued as a greenhouse plant in the old days of the "balloon trellis"—surely a "false ideal," and one of the very ugliest ways in which graceful climbers could be grown. But even in that way this Sollya and the dainty little tuberous-rooted kinds of Tropæolum used to be extremely fascinating to many in habit, such as *S. parviflora* (*S. Drummondi*), *S. salicifolia* (*S. heterophylla*), and *S. angustifolia*, or *S. linearis*, also a form of the last-named.

STAUNTONIA LATIFOLIA (syn. *Holbœllia latifolia*).—This plant bears clusters of small greenish-white, highly-fragrant flowers in March, and often perfects seed-pods in the autumn. It is a rapid grower, and its leathery leaves are rarely affected by frost.

STUARTIA PSEUDO-CAMELLIA. — A rare and very beautiful flowering shrub now seldom seen in even

the best of gardens. It is a native of Japan, the flowers being ivory white and perfectly cup-shaped, somewhat like a single White Camellia. *S. pentagyna* comes from North America, as also *S. virginica*, but the first-named is the finest and is worth a good deal of trouble to grow well. Planted in loam and peat and sand at the foot of a sunny and sheltered wall, the flowering shoots may be preserved intact during the winter.

TRICUSPIDARIA HEXAPETALA.—A very distinct and beautiful evergreen shrub, perhaps better known as *Crinodendron Hookeri*. It is a native of Chili, and grows 5 or 6 feet high, its stiff branches set with dark, shiny ovate leaves. The flowers are nearly globular, very fleshy, and rich crimson-red or cherry colour. In both co. Wicklow, at Mount Usher, and at Salerno, co. Dublin, this rare shrub is very luxuriant and beautiful. It grows wellin deep, rich, moist loam or in peaty soils, and propagates readily by layers laid down under stones.

VIBURNUM.—Some of the Viburnums are handsome against walls, such as *V. macrocephalum* and the Chinese *V. plicatum*.

VITIS (Vine).—The Vines are the most graceful and beautiful of all climbers, and many of them are of glorious colour in autumn. The Virginian Creepers (*Ampelopsis*) are now grouped with the Vines. Of the American Vines, *Vitis æstivalis*, *V. californica*, beautiful autumn colour; *V. cordifolia*, the Northern Fox Grape (*V. Labrusca*), Southern Fox Grape (*V. vulpina*). The Virginian Creeper (*V. quinquefolia*) is, as is generally

known, very showy in autumn. Of the Asiatic Vines, *V. Coignetiæ* is the most famous. It has very large leaves, which turn to a glowing crimson in autumn. It is a noble climber. *V. heterophylla humulifolia* has beautiful fruit, each berry about the size of a pea and turquoise blue; it likes a warm, sunny wall. *V. (Ampelopsis) Veitchii* is too well known to describe. *V. Romaneti* and *V. vinifera*, the Common Grape Vine, also deserve notice. Of the last-mentioned there are many beautiful varieties, such as *Purpurea*, Miller's Burgundy, Teinturier, with claret-coloured foliage, and the Parsley-leaved Vine. *V. Thunbergi* has very fine leaves, which turn crimson in autumn. The Vines should be seen in greater variety in gardens.

WEIGELA.—May be grown against fences and even walls, but are better against the former. I saw a fence covered with the crimson-flowered Eva Rathke in a London garden, and it flowered abundantly every year.

WISTARIA.—Wistaria time is a pleasant season of the year. A few noble examples may be seen in the suburbs of London, especially at Kew and Hampton Court, where the trees must be a great age, while quite a fine plant is in the Royal Gardens, Kew, also. What may be achieved with this plant if some attention to its needs were forthcoming is not clear, for most of the Wistarias we see from time to time shift for themselves, and by the position they occupy must have large numbers of their roots in dusty, dry soil. In former days it was always the custom to plant this

OLD WISTARIA AT HAMPTON COURT.

WISTARIA RACEME; SHORT, W. SINENSIS; LONG, W. MULTIJUGA.

fine climber at the base of the dwelling-house wall, but now, with a fuller knowledge of its robust growth, its widely-extending branches, and equally its wide-rooting capacity, other positions may with advantage be secured for it. One example may be seen at Kew, where a fine plant covers a huge cage-like structure. Another good way would be to plant it to run over pergolas, and with Clematis to succeed the Wistaria, the effect would be distinctly good. *W. chinensis*, the mauve-flowered species is the one usually planted. The variety *alba* is less robust, and does not flower so freely; it wants a warm place. *W. multijuga* has very long racemes. The double variety is very beautiful when in perfection, but our experience is that it never flowers freely, and the raceme is often poor.

FLOWERING AND OTHER HEDGES

OF the more or less known 3000 species and varieties of trees and shrubs hardy in this country, only a small proportion are suitable for making good hedges. Every garden of any size has a hedge or two of untidy look through inattention at the proper time. A hedge must be kept in proper order, not a difficult business when clipping is done annually, when to do so depending upon the plants used.

Hedges may be of two kinds—the neat trimmed hedge, which serves as an outside line to a garden, and also as a screen or wind-break to small or tender plants growing near it; and the straggling rough hedge, varying from 10 to 20 feet in width, more properly a wide bank made up of all sorts of plants, rambling Roses, ornamental Vines, and other things which usually serve to brighten some spot where colour is desirable, or to shut out an undesirable view. The best plants comprise both evergreens and deciduous, but only one thing should be used, as mixed hedges are rarely a success, and of mingled evergreen and deciduous plants are generally quite a failure. The best evergreen plants in their order of merit are Holly, Yew, Arbor-vitæ (*Thuya occidentalis*), *Thuya gigantea*, *Lobbi*, Common Box, *Cupressus lawsoniana*, *C. nootkatensis* (*Thujopsis borealis*), Privet (*Ligus-*

trum), Common Laurel, Portugal Laurel Pyramid Laurel (*Prunus lusitanica myrtifolia*), *Berberis Darwinii*, and *Osmanthus ilicifolius*.

HOLLY.—The Common Holly makes one of the best evergreen hedges. Its growth, though somewhat slow, is regular, and it does not mind the shears, but it is costly to use to any extent. It does not move readily, so that for the first year or two there will probably be a few gaps to fill up, but when the hedge is once established it is there practically for ever, and with proper attention will never become rough or unsightly. Before planting the site should be marked out, and the ground trenched 3 feet wide and deep, breaking the subsoil with a fork, and working some well-decayed manure about half-way down. This will tend to draw the roots down, and keep them from running out on either side to the injury of neighbouring plants. Plants should be obtained in the early autumn, as soon as it is safe to move them, and planted at once before the ground gets cool. If this be done they will make fresh roots and get established before winter. Some prefer to move Hollies in May, but much depends on whether artificial watering can be done. If it can, May is quite as good a time as September or October ; if not, then choose the autumn.

The size of the plants used depends upon taste and the depth of the pocket, but good plants, 1½ to 2 feet high, with a leading shoot or two on each, placed from 12 to 16 inches apart, can be recommended, as they move readily at that size, and are

not so costly as larger plants. Holly hedges should be clipped in late August or early September, when they will make a short growth before winter, and keep in good condition without further attention until the following autumn. The height of the hedge is entirely a matter for the owner to decide, one 30 or 40 feet high, properly feathered to the ground, being quite possible, as we know from some already in existence. When grown to this height, however, the top should be cut to a point to throw off snow. The flatness of the hedge can be broken by allowing a few leading shoots, 20 or 30 feet apart, to run up, budding them in August with some of the variegated varieties. Gold Queen, Waterer's Gold, Silver Queen, and *Argentea variegata* are good sorts to use for this.

When a Holly hedge has been neglected for some years cut it back to the old wood in March or April, and fork in a liberal dressing of manure around it. It may not make much growth the first year, but will practically re-establish itself the second.

YEW.—The Common Yew is hard to kill, and easy to prune into various shapes, as topiary work suggests. Yew is generally used for the inside of a garden, such as terraces and hedges near the house. It should be treated in the same way as the Holly, with the important exception of being clipped in May, as the Yew makes most of its growth in the early part of the year. In buying Yews, choose rather stunted-looking plants in preference to those of fresher look and freer growth. The former have been moved

within the last year or two, the latter have stood for three or four, and become coarse rooted, suffering, therefore, after removal.

ARBOR-VITÆ.—For a hedge this and *Thuya gigantea* can be placed together. The common Arbor-Vitæ is sometimes not liked because it gets brown in winter, but this colouring is not so pronounced in *Thuya gigantea*. In preparing the ground little or no manure need be trenched in, but a dressing of spent manure may be added with advantage. The soil should be as good as possible, but not too heavy. They may be clipped at any season, and for the first two or three years twice annually will not be too often. It is wise to cut off from six inches to one foot of the leaders every year, otherwise the plants attain a great height without breadth. If a hedge of these conifers is allowed to become rough and ragged, it is almost impossible to restore it, as it will not, except in special cases break from the older wood.

BOX.—The dwarf edging so largely used for borders and paths needs no description, but the Common Box is not so largely used because it gets yellow, the result of sheer starvation, the Box being a gross feeder, requiring plenty of feeding at all times. It should have a dressing of manure annually, or at least biennially, to keep it in good health and colour. It should be clipped in the spring, April or May being the best months, and a top-dressing about the same time will be very beneficial to it. Box is a good shrub for an inside hedge, but should

never become overgrown, as, in addition to the hard cutting necessary to bring it into shape, it is a terrible plant to cut, even the small wood being very hard and tough.

LAWSON CYPRESS.—*Cupressus lawsoniana* and *C. nootkatensis* (*Thujopis borealis*) can be treated together, as, in addition to their natural relationship, both require the same treatment as a hedge. Neither makes a good flat-topped hedge of the ordinary kind, as the growth is distinctly pyramidal, and unless kept to a point is apt to get injured by snow. They should be cut to a point, and a hedge 12 to 20 feet high of this shape is very handsome and effective in a garden, as well as forming a first-rate screen. They can be trimmed at any time preferably in the spring or early summer, care being taken not to cut the base too hard, and the leading shoots top annually. In planting no manure need be used, provided the ground is good, and it is not required later on unless the hedge shows signs of starvation, when a good top dressing may be given with advantage. Plants 2 or 3 feet in height, placed about 18 inches apart, are a good size to use, as they move readily and are not expensive.

PRIVET.—The oval-leaved Privet (*Ligustrum ovalifolium*) is a native of Japan, and makes a fairly good hedge about 5 or 6 feet high. It grows readily, and moves without any trouble at almost any time. It can be bought cheaply. The ground should be well treated in the first place; afterwards it will require little attention in the way of feeding. It can

be clipped at almost any time, but for the first year or two should be cut hard back before growth begins in the spring. Neglect of this leads to a hedge that is leafy at the top but bare at the bottom. In this note the use of Privet is not wholly condemned, but it must be understood its use is not recommended. We have never seen a Privet hedge that ever looked respectable for any length of time. We have not a Privet hedge in the garden, and hope to be always free from such an affliction.

LAURELS.—Any of the various forms of the Common and Portugal Laurels with the types are suitable for what may be called second-rate hedges, the best being the Pyramid Portugal, which is a smaller-leaved and more upright-growing kind than any of the others. With the exception of the last-named, all the Laurels make hedges rather wide for their height, and all require much attention to keep them in proper shape. All should be clipped in June, after the first growth is made; they will then make another short growth, which will keep the hedge in good condition until the following year. The Pyramid Portugal has leaves about half the size of those of the type and quickly makes a hedge. It is rather more expensive than the commoner Laurels, but it moves well, and does not become bare at the bottom.

OSMANTHUS ILICIFOLIUS.—This plant has not been much used for hedges, but it makes a very good one if carefully looked after during the first year or two. It somewhat resembles the Common Holly,

and requires much the same treatment. It is not very expensive to buy, and the hedge should be kept to a height of 3 or 4 feet.

Deciduous Hedges

Many deciduous plants can be used for hedges, but a good selection comprises Beech, Hornbeam, Quick, Myrobalan Plum, and Sweetbriar. The first two require practically the same treatment, the most important part of which is to procure good two or three years old transplanted plants, and to treat them liberally at first. Beyond an annual trimming they will not require any further attention, except to tie or peg down a branch or two where gaps may occur.

Quick and the Myrobalan Plum should be planted in double rows to form a hedge, and be cut back hard at the time of planting to form a bottom to the hedge, which would otherwise become leggy and bare at the base. If they should happen to get into this state most of the growth should be cut away, and the main branches tied or pegged down in the direction of the hedge. In a year or two it will be practically as good as ever.

For a dividing line between the flower and kitchen gardens, or for some spot where too much formality is not required, the Common Sweetbriar makes an excellent hedge, although it requires much attention for the first few years. If planted without support, such as a wooden railing, it should be kept tied or pegged down almost to the ground for the first two

GREAT BEECH HEDGE AT MICKLEOUR, N.B.

HEDGE OF MAIDEN'S BLUSH ROSE (6 ***feet to 7 feet high***).

or three years, using practically every growth that is made by the plants. By this means a good foundation is laid for the hedge, which will, when made, merely require an annual trimming. We plant Sweetbriars everywhere. Its leaves in the early morning, or after a warm summer rain, saturate the air with their fragrance.

Hedges of Flowering Shrubs

It often happens that some kind of hedge is wanted in a garden, either as a screen to hide vegetable ground, or as a wind-break, or some kind of partition. When this is the case, it is a good plan to plant hardy flowering shrubs about 4 feet apart, and so to train and trim them that they grow into a compact hedge, and yet have enough lateral play to allow them to flower. Two years ago we privately advised some friends who were planting new gardens where such dividing hedges were wanted, and the hedges are already coming into use and beauty.

Such a hedge is not only ornamental, but it yields endless material for cutting. It should be allowed to grow quite 4 feet thick, and is best formed with a backbone of stiff woody shrubs, such as Guelder Roses, *Ribes*, and Lilac, while between the stiffer shrubs might be some that are weaker, such as *Kerria*, *Rhodotypus*, and *Leycesteria*. Plants of rank rambling growth, such as free Roses and double-flowered Brambles, *Aristolochia*, *Wistaria*, Virginia Creeper, and the rambling Honeysuckles, are not in place in such a hedge; they are more suitable for rough hedge

banks, walls, or for arbour and pergola ; the flower hedge wants true shrubs. The bush Honeysuckles, such as *Lonicera fragrantissima* and *L. tatarica*, are just right, or any woody, twiggy bushes of moderate growth, or such as are amenable to pruning and thinning, such as *Deutzia* and Snowberry shrubs that so often get overgrown in a shrubbery. In the hedge these would do well, as they could easily be watched and thinned ; also many true shrubs that flower all the better for reasonable pruning.

Any one would be surprised to see what a quantity of useful flowers such a hedge would yield, while, if there is another of foliage for winter use, it will be invaluable to the indoor decorator. We have just planted a hedge for this use, all of golden variegated or yellow-leaved shrubs, those chosen being the Scotch Gold Holly, Golden Euonymus, Golden Privet, the variegated *Eurya latifolia*, yellow variegated Box, *Cassinia fulvida* and Golden Tree Ivy, all shrubs of the utmost value for winter cuttings. Though they are barely 2 feet high as yet, the slightly varied golden hedge is already a pleasant, cheering sight in the quickly-shortening November days.

Other flower hedges are also delightful possessions. Hedges of China Rose, of Lavender, of Sweetbriar, of old garden Roses, or of climbing or rambling Roses trained down, of Honeysuckles, of Jasmine ; some of these are occasionally seen, but of a good selection of true shrubs hedges are rarely if ever made.

Any of the shrubs recommended for the mixed flowering hedge could, of course, be used alone ; and

excellent it would be to have a hedge of Guelder Rose or flowering Currant or Japan Quince, and how much more interesting than the usual hedge of Quick or Privet or Holly. Both sides of the flower hedge should be easily accessible, not necessarily by a hard path, but by a space just wide enough to go along comfortably. An additional advantage well worth considering would be that, supposing the direction of the hedge to be east and west, the south side would flower in advance of the north, and so prolong the supply of bloom.

PLEACHED OR GREEN ALLEYS

IN the old days the pleached alley was as familiar in English gardens as the pergola of the present age. Both are interesting, and both provide grateful shadowed walks in the heat of summer. The trees most generally used in the fashioning of pleached alleys were the Hornbeam and Lime, both native of this country, but green alleys have been made of Yew, of *Cotoneaster microphylla*, of Holly, and other evergreens. There are flowering Cherries of weeping habit that would suit well for such treatment, and several other small trees of pendulous growth, such as Laburnum, Weeping Ash, and the large-leaved Weeping Elm. There is an important green alley at West Dean, near Chichester, of Laburnum only.

The green alley differs from the pergola in that the pergola has solid and permanent supports, its original purpose, in addition to the giving of shade, being to support vines. The green alley, being made of stiffer and more woody growths, only needs a temporary framework to which to train the trees till they have filled the space and formed the shape. Hornbeam was the tree most used in former ages, and for a simple green alley nothing is better. Beech is also good. Several other of

A NUT WALK.

OLD APPLE WALK (*Helmingham Hall*).

the smaller trees of weeping growth should be more used for this and the allied uses of training for arbours and other shelter places in the garden.

The common Plane is much used on the continent for green shelters; the trees are pollarded at at about eight feet high, and the vigorous young growths trained down horizontally to a slight framework.

It would be interesting to make a green alley with two or perhaps three kinds of plants whose leaf form was of the same structure. For instance, a groundwork of Weeping Ash could soon be trained into shape, and Wistaria would be best to grow all over and through it. The more stiff and woody Ash would supply the eventual solid framework, as by the time the Wistaria was making strong growth (for it is very slow to make a beginning) the whole would be well in shape, and might dispense with the framing of "carpenters' work" that is necessary for its first shaping. It would be best to plant the Ash zigzag across the path so that the main of the head of each tree might be trained across the path and down to the ground on the opposite side, when it would occupy the space between the two opposite trees.

It is important to further maintain the distinction between green alley and pergola by using in the green alley only things of a permanent and woody character; no Roses or Clematis, or any other plants of which portions are apt to die or

wear out. These are proper to the pergola, whose permanent substructure makes it easier to cut away and renew those of its coverings, whether structural or growing, that are liable to partial decay.

A great many delightful things may be done with these green alleys and green shelters. Much interest is already aroused in the pergola, and when thinking of this it is well to consider these other ways of adding to the comfort and charm of our gardens. One thing, however, should be carefully considered. It should be remembered that where a path is made more important by passing under trained green growths it should have some definite reason for being so accentuated, certainly at one and desirably at both ends. It often occurs that in laying out ground the owner wishes to have a pergola, as it were, in the air, and when there is nothing to justify its presence. It should not be put at haphazard over any part of the garden walk. If of any length, it should distinctly lead from somewhere to somewhere of importance in the garden design, and should, at least at one end, finish in some distinct full-stop, such as a well-designed summer-house or tea-house.

Another important matter is that a pergola or green alley, in the usual sense, should never wind or go uphill. It is not intended by this that shading coverings cannot be used in such places, but that they would want especial design, and it is altogether a matter of doubt if these could not be much better treated in other ways.

The circumstances of different gardens are so infinitely various that it is impossible to lay down hard rules; only general rules can be given and exceptional circumstances dealt with by exceptional treatment.

Green alleys require some attention. In winter the oldest of the wood must be cut out to make room for the young growth, and when this is lengthening vigorously it must be carefully laid in.

If the alley has an iron framework, which is necessary when such strong growing things as Wistaria are used, this may be clothed during the first few years until the Wistaria is growing strongly with annual climbers such as *Cobæa scandens*, *lophospermum*, *Mina lobata*, and even varieties of the large-flowered Clematis, which must be removed when the Wistaria covers the alley.

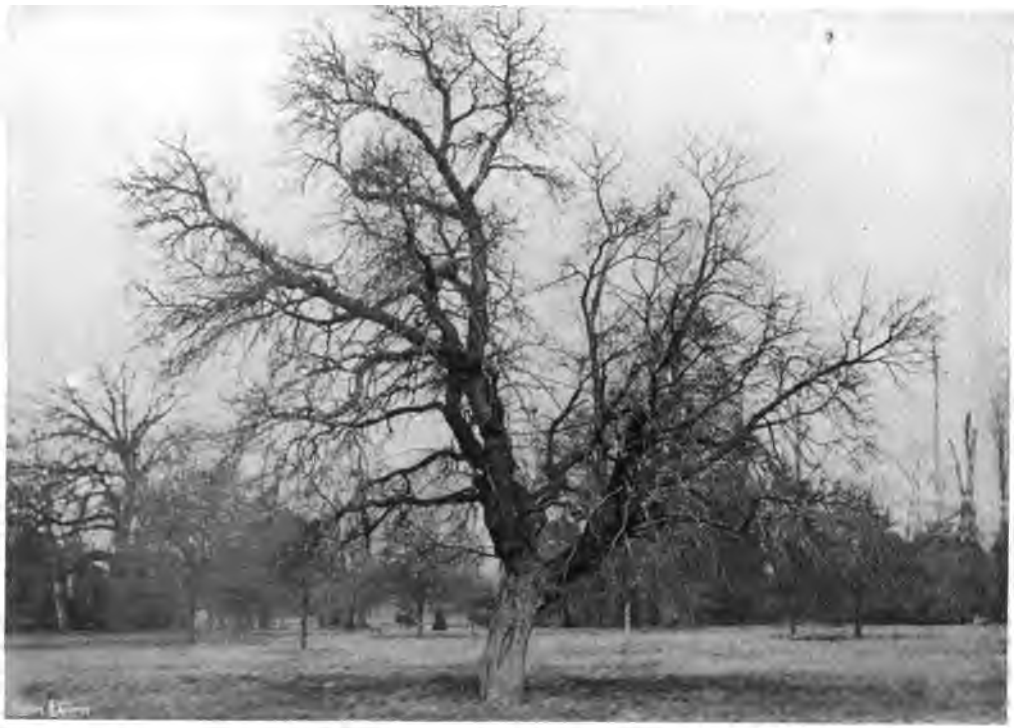
Very charming alleys are sometimes formed of fruit trees—Pear, Apple, Cherry, and Plum making delightful spring pictures, and almost as much so when in fruit in autumn. Where fruit and flower are desired every shoot must be exposed to sun and air. When densely shaded by other growths the wood does not ripen, and therefore flowers badly, if at all.

THE GARDEN ORCHARD

ONE'S enjoyment of the garden would be greatly increased if the orchard, which is so often thrust away into a remote corner, were brought into direct communication with it. How easily the trimmer lawn spaces might lead through groups of flowering shrubs to the rather rougher grassy orchard. How naturally the garden Roses and masses of free-growing Cluster Roses would lead to their near relations, the Pears and Apples and other fruiting trees of the great Rose order.

There is no need to make a definite break between the two; it is all the better not to know where the garden ends and the orchard begins. Towards the edge of the mown lawn there may already be trees of the Red Siberian Crab and the handsome Crab John Downie, and the pretty little Fairy Apple; while the nearer orchard trees may well be wreathed with some of the free Cluster Roses, such as Bennett's Seedling or Dundee Rambler.

If the orchard is of some extent its standard trees of Pear, Apple, Cherry, and Plum may be varied by three or four bush trees, or by some of the beautiful fruit trees of lower growth, such as Medlars and Quinces. There may also be breaks of cut-leaved Blackberry and a thicket of Crabs or Filberts, and



OLD MULBERRY AT SYON, MIDDLESEX.

OLD MEDLAR TREE ON EDGE OF GARDEN ORCHARD.

on some one side, or perhaps more, a shady Nut alley. There is no need to be always moving the garden orchard. One wide, easy, grassy way might well be kept closely shorn, but much of the middle and side spaces had better not be cut until hay-time, for many would be the bulbs planted under the turf, great drifts of Daffodils and Spanish Scillas, and Fritillaries for the larger effects, and Colchicums and Saffron Crocus for the later months. If the grass were mown again in September, just before the Colchicums appear, it would allow of easy access to the fruit trees in the time of their harvest, and in those interesting weeks immediately before the Apples ripen.

It must not be forgotten that the best use of many fruit-bearing trees is not restricted to the kitchen garden only, for many of them are beautiful things in the most dressed ground. Few small trees are more graceful in habit than the old English Quince that bears the smooth, roundish fruits. It is not only a pleasant object in leaf and flower in early summer, and in autumn glory of golden fruit, but even when bare of leaves in winter a fully matured tree is strikingly beautiful, and in boggy ground where no other tree would thrive it is just at its happiest and is most fruitful. Then many Apples are extremely ornamental, and there is a whole range of Crabs ; Siberian, Chinese, and home-raised hybrids that are delightful things both in flower and in fruit. *Pyrus Maulei*, vieing in beauty of bloom with its near neighbours, the Japanese Quinces, quite outdoes them

in glory and bounty of fruit, which in October is one of the most brilliant things in the garden. There are no better garden ornaments for foliage than Figs and Vines, and though the needful pruning of a Vine for fruit takes off somewhat of its pictorial value, which depends in some measure on the wide-flung, luscious summer growth and groping tendril, yet in any shape the Grape Vine is a thing of beauty. Some of its garden kinds also show how, in distinct departures in colour and shape of leaf, it is always beautiful ; for the Parsley-leaved Vine, with its dainty and deeply-cut foliage, is a suitable accompaniment to the most refined architecture ; while the red-purple leaf of the Claret Vine and its close clusters of blue fruit are richly ornamental in the autumn garden. A Medlar tree, with its large white bloom and handsome leaves, is desirable, and several of the Services are ornamental small trees. Every one knows the lovely pink bloom of the Almond in April, but few may have tried something that is not an experiment but a certainty—namely, the successful culture of the hardier Peaches, near relatives to the Almond, as standards in the south of England. A Peach of American origin, the Early Alexander, bears full or fair crops every year. The only danger is from leaf blister from sudden cold in May, but if its position is sheltered, or if it can be afforded the protection of a net, it will suffer but little, and perfectly ripened peaches, red all round, may be had at the end of July. The beauty of Cherry blossom is so well known that it needs no extolling ; and any great high

wall looks the better at all seasons for a well-trained old Pear.

A free planting of the cut-leaved Bramble is pleasant to see on the outskirts of the garden, and is beautiful in leaf, in flower, and in fruit.

THE WORTHY USE OF ROSES

FOR a full consideration of the Rose as a garden flower, one must look to such a work as "Roses for English Gardens," but as the Rose is a flowering shrub it cannot be omitted from the present volume.

In these days of horticultural prosperity and rapid progress, when there would appear to be one or more specialists devoting themselves to every worthy flower, we need scarcely say that the Rose has not been forgotten. Indeed, within the memory of many who have watched its culture for the last forty years, the rapid advance is nothing less than astonishing. Our own veteran growers and some of the foreign firms seem to have vied with each other in producing new forms in the Hybrid Perpetuals and in the Teas, but it has been almost within the last decade that growers have not only deepened the interest in the cultivation of the Rose, but have immensely widened it by striking out in new directions.

It is now a good many years since the Bennett hybrids appeared and gave us many forms of noteworthy novelty, but the parents of these were still among the well-known H.P.'s and Teas and Chinas. But of late years hybridists have taken in hand some of the handsomer of the species, and by working them with well-established favourites have produced

whole new ranges of fine Roses. Of these the most prominent have been products of *R. polyantha, rugosa, rubiginosa,* and *wichuriana.* The striking success of many of these later hybrids is encouraging in the highest degree, and the field for future work is so immense that the imagination can hardly grasp the extent of the prospect that these earlier successes seem to open out.

There are so many ways in which Roses may be beautiful. Even in the varied form and habit possessed by the types some special kind of beauty is shown and some special garden utility is foreshadowed. And then we think of the future possibilities of the Rose garden! Already—we say it with deliberation and a feeling of honest conviction—the Rose garden has never been developed to anything like its utmost possible beauty. The material already to hand even twenty years ago has never been worthily used.

The Rose garden to be beautiful must be designed and planted and tended, not with money and labour and cultural skill only, but with brains and with love, and with all those best qualities of critical appreciation—the specially-cultured knowledge of what is beautiful, and why it is beautiful—besides the indispensable ability of the practical cultivator.

There are in some places acres of Rose gardens, many of them only costly expositions of how a Rose garden had best not be made. The beautiful Rose garden, that shall be the living presentment of the poet's dream, and shall satisfy the artist's eye, and

rejoice the gardener's heart, and give the restful happiness and kindle the reverent wonderment of delight, in such ways as should be the fulfilment of its best purpose, has yet to be made.

It matters not whether it is in the quite free garden where Roses shall be in natural groups and great flowery masses and arching fountains, and where those of rambling growth on its outskirts shall clamber into half-distant surrounding trees and bushes, or whether it is in the garden of ordered formality that befits a palatial building; there are the Roses for all these places, and for all these and many other uses. Indeed, for reducing the hard lines of the most formal gardens and for showing them at their best, for such enjoyment as they may give by the humanising of their rigid lines and the softening of their original intention as a display of pomp and state and the least sympathetic kind of greatness, the beneficent quality of age and accompanying over-growth may be best shown by the wreathing and clambering cluster Roses, whose graceful growth and tender bloom are displayed all the better for their association with the hard lines and rough textures of masonry surfaces.

Some Beautiful Wild Roses

No family of hardy shrubs is more bewildering in the multiplicity and intricacy of its nomenclature than Rosa. There are only some seventy species now accepted by botantists, yet the pseudo-specific

names may be counted by hundreds. Fortunately for those interested in their cultivation, a good many of these names refer to plants with very unimportant distinctions (many of them, indeed, are minor forms of our native Dog Rose), and the best of the wild species are mostly grown under the names applied to them in the following notes.

Their cultivation is simple. They are like the Hybrid Perpetuals in their love for a rich loamy soil—one inclining to a clayey rather than to a sandy nature. Loving abundant sunlight, they are not happy in shady spots. The commonest mistake in their cultivation is in pruning. The notion that they have to be cut back like Hybrid Perpetuals and such-like Roses has often resulted in the loss of a season's flowers, besides destroying for the time the peculiar beauty of habit that many species possess. The shoots, often long, sucker-like growths that push from the base in summer, supply the flowers of the following year, and until they have flowered should not be touched with a knife. Whatever pruning is necessary—and it is, as a rule, a mere matter of thinning out of old worn-out stems—is to give the young growths more air and freedom. No shortening back is needed. It may always be remembered that some of the most beautiful specimens of Wild Roses in existence, especially those of rambling growth, have never been pruned at all. The chief thing is always to retain the free, unfettered grace natural to the plants. Pruning will help to do this, but it must be pruning of the proper kind.

In the wilder parts of the garden the common Dog Rose (*R. canina*) and its numerous varieties are worth a place; they flower well, and are always beautiful in fruit. The same may be said of the Sweet Briar (*R. rubiginosa*), the fragrance of whose young growths is always a delight, whether in garden or hedgerow. *R. hibernica*, a British Rose, thought to be a hybrid between the Scotch Rose and *R. canina*, comes in the same category. It flowers earlier than the Dog Rose.

For the wild garden also there are several other Roses that may be mentioned, such as *cinnamomea*, with rosy-red flowers and crimson fruit; *nutkana*, *acicularis*, *pisocarpa*, and *californica*. Only those are mentioned that from their greater beauty and distinctness deserve a more detailed notice.

R. ALBA.—Although found wild in several parts of Europe, this, the "Common White Rose" of Linnæus, is supposed to be a hybrid between *R. gallica* and the Dog Rose. It is always found in places which lead to the belief that it is not truly indigenous, but an escape from cultivated grounds. The typical plant has white flowers that are considerably larger than those of the Dog Rose, and the petals have more substance. There are now numerous double-flowered varieties in gardens, some beautifully tinged with rose.

R. ALBERTI.—A native of Turkestan, where it was discovered by M. Albert Regel not many years ago. This is one of the rarest species of Rosa in cultiva-

tion. The flowers are bright yellow, the leaves small and much divided.

R. ALPINA.—This is the species from which the Boursault Roses have been derived. It is a native of the Alps and Pyrenees. The stems are 4 to 5 feet high, and have few or no spines except when young. The flowers are rosy red; the fruits red, often pear-shaped, and covered with bristles, which, when rubbed, have a turpentine-like odour.

R. ARVENSIS (or R. REPENS).—From this species the Ayrshire Roses have been obtained. It is naturally a trailing or climbing plant, having long thin shoots and white flowers. When trained over tree stumps or rough stakes and ultimately allowed to grow at will, it forms tangled masses which are very pretty. But the double forms—even the common variety, *flore-peno*—are to be preferred, being especially useful in semi-wild spots. The type is wild in England, and frequently to be seen in hedges and thickets.

R. CAROLINA.—For certain positions this is a useful Rose. It has erect stems and forms dense thickets, spreading rapidly by means of the numerous underground rhizomes it sends out in all directions. The flowers are purplish rose. A later-flowering variety known as *nuttalliana* is a stronger grower and has larger flowers. This will flower up to September. *R. lucida* and *R. nitida* are, like *R. carolina*, natives of North America, and are of similar habit, but they are dwarfer and the leaves are more glossy. All these are apt to become crowded with old stems, and,

besides an occasional thinning out, are much improved by dividing up every three or four years.

R. FERRUGINEA (R. RUBRIFOLIA).—This species, which comes from the Pyrenees and Alps, is remarkable for the reddish-purple colour of its leaves and young shoots. Groups of half-a-dozen or more plants give a striking colour effect. The flowers are similar to the Dog Rose, but red.

R. LÆVIGATA (R. SINICA).—Except in the south and south-west or in similarly favoured localities, this is not really hardy, but where it thrives it is a singularly beautiful Rose, perhaps unsurpassed among single Roses in the size of its pure white flowers. It is known as the Cherokee Rose, and is naturalised in some of the Southern United States. A lovely hybrid between it and *R. indica* has been raised and named Anemone. Its flowers are soft rose.

R. LUTEA (Austrian Briar).—Of all the Wild Yellow Roses this is the most beautiful. The yellow-flowered species do not, as a rule, thrive so well as the others in gardens—one has only to mention such species as *berberifolia*, *sulphurea*, *xanthina* (or *Ecæ*) to recall that. But *R. lutea*, in strong loam with plenty of lime added, generally thrives well. The copper-coloured varieties are more difficult to deal with in suburban districts. The flowers of the typical *R. lutea* are of the brightest rich yellow. When in good health it produces each year long arching shoots, wreathed from end to end with blossom. This species comes from the Orient.

R. MICROPHYLLA.—This interesting species is closely allied to *R. rugosa*, and is a native of

ROSA MULTIFLORA.

HYBRID ROSE UNA, A SHRUBBY GROUP ON GRASS.
(Bed is 70 feet in circumference and contains 15 plants.)

China. It has a sturdy bushy habit, few spines, and the curious habit of peeling its bark. Its foliage is very handsome, the leaflets being small and numerous. The flowers are rose coloured and very fragrant. The shrub is interesting for its fine fruits, which are of large size, very spiny, and of a yellowish colour when ripe. Although some other species surpass this in showiness, it is one of the most distinct.

R. MOSCHATA (Musk Rose).—When seen at its best, few of the rambling species are more beautiful than this. It is not, however, so hardy as some, especially when young, in which state it makes long, succulent shoots during summer and autumn, which are apt to be killed back in winter. Old plants do not suffer in the same way, or not so severely. Its flowers are borne in great clusters, and are notable for their pure whiteness and conspicuous bunches of bright-yellow stamens. The best plants often of this species are in shrubberies, where, no doubt, the other shrubs afford it some protection. It is a native of the Orient and India. The name "Musk Rose" refers to a perfume which may occasionally be detected in its flowers after a shower, but is never very apparent. *Nivea* is a beautiful form.

R. MULTIFLORA.—This, the Polyantha Rose, the wild type of the group so named and the progenitor of many graceful Roses, is a native of Japan and China. It is a shrub 8 feet or more high, forming a dense thicket of arching branches. Its flowers individually are small, but they come in large dense clusters and so abundantly as to transform the shrub

into a mass of white. They are very fragrant. This is an admirable plant for putting at the top of a wall or steep bank which it is desirable to drape with vegetation. The Polyantha group of Roses can always be distinguished by the stipules at the base of the leaf-stalk being fringed.

R. OCHROLEUCA.—In stature, foliage, and mode of growth this is like the Scotch Rose, but its flowers are of as bright and rich a yellow as those of the Austrian Yellow (*R. lutea*). Where *R. lutea* does not grow well, this will be an excellent substitute. A native of Siberia.

R. POMIFERA (Apple Rose).—This is, perhaps, the most striking of Roses in regard to its fruit. The hips are 1 to 1½ inches long, apple or pear-shaped, of a fine bright red, and covered with bristles. It is a species that requires generous conditions at the root to be seen at its best. *R. mollis* and *R. tomentosa* belong to the same group, and have also fine red fruits, but they are much smaller than those of *R. pomifera*.

R. RUGOSA (Japanese Rose).—No plant has come to the front more rapidly in recent years than this Rose. It was introduced from Japan in 1845, but appears to have been neglected. It is one of the very hardiest of Roses, as well as one of the sturdiest and most robust. The leaves are very handsome, the leaflets being of a rich green and wrinkled. The flowers in the wild type are rosy crimson, but there is also a white variety, and seedlings give quite a variety of shades. It hybridises freely with other species and garden varieties, and has in this way

enriched our gardens with many good hybrids, Mme. Georges Bruant and the Coubert Double White among them. The fruits of *R. rugosa* are orange-shaped, scarlet red, and of large size—altogether very ornamental.

R. SERICEA.—For some reason this Rose has never obtained the recognition it deserves. Perhaps its comparative rarity may account for this. It is the earliest of all Roses to flower out of doors, its first blossoms opening as a rule towards the latter end of May; the flowers are creamy white. In the cooler days of May and early June it lasts longer in bloom than many of the later flowering species do. It has one very distinctive character, in the petals being nearly always four (instead of the usual five) to each flower. Sometimes the bark of the young shoots is a bright red. A native of North India.

R. SETIGERA.—Of the North American Roses none has proved more useful in this country than the Prairie Rose. A rambler in habit, it is valuable for its vigorous growth and late flowering. The flowers are large, deep rose, and appear in July and August.

R. SPINOSISSIMA (R. PIMPINELLIFOLIA).—The Scotch Rose is one of the earliest species to bloom; it is also one of the prettiest and most distinct. The stems are dwarf and covered with bristles, the leaves small, and the flower white and cup-shaped. There are several wild varieties of it, the two most noteworthy being *altaica* (or *grandiflora*) and *hispida*. Both these grow 6 feet or more high, and the flowers of both are larger than the typical Scotch Rose. Those of *altaica* are

creamy white; those of *hispida* a lovely cream yellow. The garden varieties of this Rose are numerous—some double, some single, and varying in colour from yellow to white and from pink to purple. The type is found wild in several parts of Britain.

R. WEBBIANA.—Coming from some of the highest elevations on the Himalaya at which shrubby vegetation exists, this species is the hardiest of the Indian Roses. It has a thin, graceful habit, and its spiny stems are blue white when young. This year it has been very pretty in the unusual profusion of its bluish-tinted flowers, each of which are about 2 inches across. The leaves are of a blue green, and are similar in size and division to those of the Scotch Roses. But it is quite distinct from them or any others, for which reason it is worth the notice of lovers of these wild types.

R. WICHURIANA.—It is not many years since this Japanese Rose was first introduced, but it is now fairly well known. It is a perfectly prostrate plant, and is remarkable for the shiny, varnished appearance of the leaves. It is one of the latest species to come into bloom. The flowers are pure white, and appear during July and August in clusters resting on the carpet of glossy foliage. It makes an excellent covering for sunny banks where the soil is good. Old tree stumps are also pretty when covered with this Rose. It has already been hybridised, and among its progeny are Pink Roamer, Manda's Triumph, South Orange Perfection, and Jersey Beauty. There is a very distinct cross between it and *R. rugosa* at Kew.

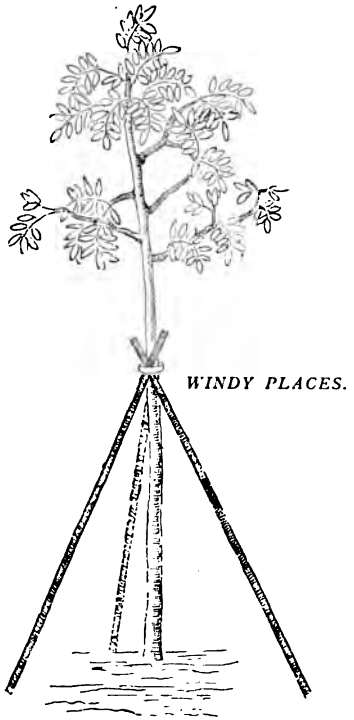
PLANTING AND STAKING TREES

A FEW words of advice upon these important subjects will be helpful. When planting a tree, prepare the ground beforehand, so that when the trees arrive they can be put at once into their proper places without having to be laid in. If the trees are to be planted thickly, trench the ground to a depth of at least 2 feet, keeping the top spit to the top all the while, merely burying the turf if there is any. If the soil is poor, enrich it during the trenching. If possible this trenching should be done the spring previous to the planting of the trees, and the ground cropped with Potatoes or Cabbages to keep down weeds during summer. If the trees are to be planted wide apart or as isolated specimens, make large holes, varying in diameter from 6 to 10 feet, these being trenched 2 or 2½ feet deep and filled in again to within 1 foot of the surface. The shape of the hole is a small matter, round or square being equally good. In some instances, however, especially when a tree is being moved with a large mass of soil, a square hole will be found handier than a round one, on account of the additional room given by the corners.

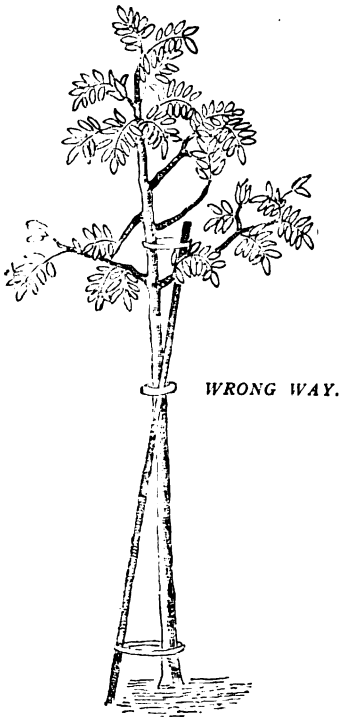
The time to plant is of much importance, for though deciduous trees may be transplanted through-

out winter, October, November, February, and March are preferable to December or January. October and November are the two best months, as then the ground is warm and root action begins before winter sets in.

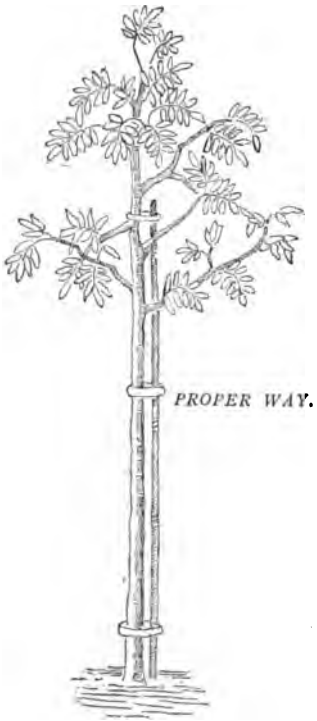
If the trees are simply to be transplanted from one position in the garden to another, the work may be begun in the case of deciduous trees as soon as the leaves turn colour and commence to fall. In lifting, take care not to injure the roots. When putting the spade into the ground the edge should be to the tree, not the face. Digging must begin at a reasonable distance from the tree, and if a ball of soil is not required, the soil should be forked from between the roots into a trench which has previously been made round the stem. If, while lifting, any of the main roots have suffered, cut the injured parts away with a sharp knife and tar over the wounds. When planting, the tree should be stood in the hole, and a stick laid across the top of the hole near the tree to ascertain whether the depth is right, sufficient space for an inch of soil over the uppermost root being allowed. The centre of the hole should be filled in slightly higher than the sides, and on the little mound the tree should be stood, laying the roots out carefully all round. When filling the soil in, some fine material should be worked in among the roots with the hand, and before the hole is fully filled in give a good watering; this has the effect of settling the soil well about the roots. The amount of ramming necessary depends on the



WINDY PLACES.



WRONG WAY.



PROPER WAY.

STAKING TREES.

consistency of the soil. After a tree is planted in early autumn a mulching of rotten manure may be given, but if the planting is done in spring the mulching is better left until early summer when the ground has become warmed.

After planting, staking, where necessary, should be attended to. It is not necessary to stake every tree that is planted. When it is sturdy, with a well-balanced head and set of roots, and the position is not exposed to rough winds, staking is needless. If, however, the stem is weak or the roots are mostly on one side, not spread round the tree, or the position is very exposed, staking for a time will be necessary. In the case of young trees little difficulty will be experienced, as good straight stakes can be easily got. As a rule, one stake is quite enough for a tree, and that should be driven in as close as possible to the trunk without injuring it or the roots. To the stake the tree should be secured with wire or stout tar string, using thin cushions of felt, leather, or old hose-pipe to keep the wire or string from cutting into the bark. Allow a little room between the stem and stake for growth. Two or three ties are usually sufficient, and these should be examined and loosened once or twice a year until the stakes can be dispensed with. The habit of putting in stakes in such a way that they cross the trunk, and that when the wind blows there is sufficient play for the stem and the stake to rub against each other, is a bad one, the chafing often causing serious wounds. In exposed situations, or

when there is danger of the tree rocking about and becoming loose at the collar, put in three stakes in the form of a triangle, the stem fitting in the space left between the three stakes at the top, while the bottoms of the stakes extend some 2 or 3 feet from the tree. For this purpose wires fastened to stakes driven in the ground are useful, and neater than stout stakes. When wires are used, however, take care to provide a good soft pad between the tree and the wire. For trees with large heads, or those not well furnished with roots, this way of staking will be found very useful. When inserting stakes they should be properly sharpened for the sake of straight driving. The staking of trees which have the lower parts of their trunks straight and their leaders crooked differs from other staking, as the stakes should not be driven into the ground, but tied firmly to the trunk below the bend, the leader being then drawn to the stake. In all cases, however, where staking is done the stakes should be removed as soon as the trees are able to do without them. A stake is not beautiful. There is always the chance of the tying material being left a little too long without examination, and therefore it cuts into the bark. Ties also harbour insects.

SOME HARDY FLOWERING TREES AND SHRUBS

THE following are tables of hardy flowering trees and shrubs, and comprise only species and varieties suitable, unless otherwise stated, for almost all parts of the British Isles. An asterisk (*) denotes those of the first importance. This way has been adopted to compress as much information as possible into a small space.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
ÆSCULUS (Pavia), Horse Chestnut, Buck-eye	Sapindaceæ		A well-known group represented most largely by the Horse Chestnut, which is the tallest of the species. The Æsculi generally are of medium size, and not very particular about soil or position. The smaller growers were at one time placed in a distinct genus, Pavia, but now placed with Æsculus. The more shrubby species are welcome in the garden, where the Horse Chestnut would be out of place.
*Æ. carnea	Hybrid between Æ. Hippocastanum and Æ. Pavia. Synonymous with Æ. rubicunda	Bright red; late May and early June	This is a handsome tree for the garden, and is generally about 15 feet high in Britain. Its chief charm is in the profusion and brilliant red colouring of the flower-spikes. It is not of quick growth, but flowers when very young. It will be found in many lists under the name of Æ. rubicunda, the red Horse Chestnut. Rosea is a good variety recommended by Mr. Anthony Waterer as a "tree for planting in smoky districts." Another fine variety, peculiarly bright in flower colouring, is Æ. Brioti.
Æ. flava	A native of Carolina and Virginia, and introduced in 1764 on mountain slopes	Pale yellow	Those who want a tree in this family of distinct colour will find pleasure probably in this, but its colouring is dull, and the flowers are not plentiful.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Æ. Hippocastanum (Common Horse Chestnut)	Loudon, in his "Arboretum," says: "According to M. Jaume Sainte-Hilaire, and his account appears to us the most probable, the Horse Chestnut passed from the mountains of Thibet to England in 1550." Gerard mentions the Horse Chestnut in his "Herbal" in 1579 as a rare foreign tree	White; late May or early June. There is considerable variation, as many of the trees in parks and gardens have been raised from seed	The common Horse Chestnut is too well known to describe. It is not a tree for very exposed places, as its large leaves offer considerable resistance to the wind, and get torn and unsightly. The double variety (flore-pleno) is very distinct, having quite double flowers. Foliis aureis variegatis is a variegated variety, as the name suggests, with blotches of yellow on the leaves; and laciniata has cut foliage.
Æ. indica	Nepaul, and other parts of Northern India. On the Himalaya the tree reaches a height of 70 feet, with a trunk 3 feet through	White, with yellow and red blotches at the base of the petals; Summer	This distinct and beautiful tree is perhaps the rarest of the Horse Chestnuts in cultivation, and probably neither so hardy nor so robust as the common species. It flowered in England as long ago as 1858 at Mildenhall in Suffolk, but has been little heard of. It is a tree doubtless for the Cornish and Devonshire and southern coast gardens where the Himalayan Rhododendrons thrive well. Sir Joseph Hooker, during his Himalaya travels fifty years ago, saw it loaded with its white racemes, and equal in beauty to the common Horse Chestnut of English parks. Its foliage is quite distinct from that of the other species, the leaflets numbering seven or nine, and being of a dark glossy green. In the other Horse Chestnuts the leaflets are usually only five to each leaf, and never more than seven. The racemes of this Indian species are about 8 inches long, the flowers being white, with blotches of yellow and red at the base of the petals.
*Æ. (Pavia) parviflora	North America. On river banks in Georgia. Introduced to England by Mr. John Fraser in 1786	White fragrant flowers sometimes tinged with pink, and long stamens,	This is better known as P. macrostachya, and is a low, spreading shrub 8 to 10 feet high; the leaves consist of five to seven finely serrated leaflets, covered underneath with a whitish tomentum. Although introduced so long

HORSE CHESTNUT (Æsculus Hippocastanum) IN FLOWER.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Æ. (Pavia), parviflora	North America	and in long upright racemes	ago, this August flowering shrub is not common; it is a good shrub for a small garden, and is not fastidious about soil or even situation if not too shady. It is increased by suckers thrown up around the plant. These, when detached with a portion of root, soon form good plants.
Æ. californica	California. 40 feet in its native country, but not much more than a shrub here	Erect spikes of white or delicate rose; sweet-smelling flowers; May	This is not much known, but is a handsome shrub or tree.
*Æ. Pavia (P. rubra)	North America	Red; early summer	This is the Red Buckeye, and will grow 15 feet high, but is more often simply a big shrub. The flowers are very bright red in colour, and in loose clusters, unlike the dense spikes of the common Horse Chestnut. The varieties are even dwarfer. Humilis, for instance, is only 4 feet. Atrosanguinea has very dark red flowers, and those of whitleyana are brighter than the type.
Æ. turbinata	Japan (introduced by Messrs. Veitch & Sons)	Yellowish white, not so large as those of the common Horse Chestnut	As this has not yet flowered in this country, as far as we are aware, but will probably become popular here, the following account of it by Professor Sargent in his "Forest and Flora of Japan" will be interesting:— "This, however, is a noble tree—one of the largest and stateliest of all the horse chestnuts. In the forests of the interior mountain regions of Central Hondo, at elevations between 2000 and 3000 feet, horse chestnuts 80 to 100 feet tall, with trunks 3 or 4 feet in diameter, are not uncommon. These were, perhaps, the largest deciduous trees on the main island growing naturally in the forest—that is, which had not been planted by men—and their escape from destruction was probably due to their inaccessible position, and to the fact that the wood of the horse chestnut is not particularly valued by the Japanese.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Æ. turbinata	Japan	Yellowish white	In habit, and in the form, venation, and colouring of the leaves, the Japanese horse chestnut resembles the horse chestnut of our gardens, the Grecian Æsculus Hippocastanum, and at first sight it might easily be mistaken for that tree, but the thyrsus of flowers of the Japanese species, which is 10 or 12 inches long, and only 2½ to 3 inches broad, is more slender; the flowers are smaller, and pale yellow, with short, nearly equal, petals, ciliate on the margins; and the fruit is that of the Pavias, being smooth, and showing no trace of the prickles which distinguish the true horse chestnuts. The Japanese horse chestnut reaches Southern Yezo, finding its most northern home near Mororan, on the shores of Volcano Bay, at the level of the ocean; it is generally distributed through the mountainous parts of the three southern islands, sometimes ascending in the south to an elevation of 4000 or 5000 feet. There seems no reason why this tree, which has already produced fruit in France, should not flourish in our northern states, where, as well as in Europe, it is still little known. In Northern Japan the fruits are exposed for sale in the shops, although they are probably used only as playthings for the children."
Amelanchier	Rosaceæ		A charming family of spring-flowering trees, graceful in growth, and of moderate stature. There are four species, but dozens of names in catalogues; in fact, the genus is much mixed up in many books and lists.
*A. alnifolia	North-West America	White; Spring	This is usually about 8 feet high; it is very beautiful with its wealth of white flowers in compact clusters or racemes, followed by purple berries. In the Kew "Arboretum" Hand-list no less than ten synonyms are given.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*A. canadensis	Canada	White; April	This flowers about a month before A. alnifolia, and is one of the first trees to greet us with its wealth of snow-white blossom in spring. It should be planted in a free group. Juneberry and Snowy Mespilus are its popular names. Eighteen synonyms are given in the list referred to, the most usual being A. Botryapium. No small garden should be without this lovely small tree; it is between 6 and 8 feet high, spreading, and has purplish fruits, whilst the leaves die off deep golden yellow, so that the Snowy Mespilus has many beautiful phases. There are several varieties, but the species is as beautiful as any.
A. oligocarpa	Northern United States, and found in bogs and swamps	White; April and May	This is quite a dwarf shrub, 3 feet to 4 feet, and the individual flowers are ½ inch across. As it is found in moist places it should be tried in such positions in Britain.
A. vulgaris	Europe	White; April	This has been in English gardens about 300 years. It is like the Canadian Juneberry or Snowy Mespilus, but not so beautiful. If only one Mespilus is required, choose M. canadensis.
*Andromeda polifolia (Moorwort)	Ericaceæ; North America and Northern Europe, including Britain	Pink; Summer	A small shrub about a foot high, with pretty pink wax-like flowers borne throughout the summer months. A moist, peaty soil is necessary to its welldoing.
*Berberis Aquifolium (Ash Barberry, Syn Mahonia Aquifolium)	Berberideæ; Western North America	Yellow; early Spring	A common, but handsome evergreen shrub, reaching a height of 3 to 5 feet, and clothed with dark-green pinnate and leathery leaves. The flowers are bright golden; they are succeeded by berries, purple when ripe, which add to the ornamental features of the plant. It is one of the best shrubs for growing under trees, and in many places is planted for game cover.
*B. buxifolia (Box-leaved Barberry, Syn B. dulcis)	Chili	Yellow; April and early May	An upright evergreen bush 5 feet high, clothed with small box-like leaves, and bearing drooping blossoms borne on unusually long stalks. It is not so handsome as B. Dar-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*B. buxifolia (Box-leaved Barberry, Syn B. dulcis)	Chili	Yellow; April and early May	winii or B. stenophylla, but flowering before them is on that account valuable. A dwarf variety (nana) is a pretty rockwork plant.
B. concinna	Himalaya	Pale yellow	A little deciduous shrub not more than 18 inches high, and with silvery undersides to the leaves. It needs a sheltered spot in good soil.
B. congestiflora var hakeoides	Chili	Bright Yellow	A large interesting bush, with masses of flowers. Rare.
B. aristata	Himalaya	Yellow	A strong-growing deciduous shrub, somewhat after the style of the common Barberry, but chiefly remarkable from the bright red of the young bark, which thus forms a fine winter feature.
*B. Darwinii (Darwin's Barberry)	Chili	Orange yellow; May	This ranks with B. stenophylla as the most handsome of all Barberries; and, indeed, it is in the very front rank of flowering shrubs. It is of bold, wide-spreading growth 6 to 8 feet high, and the masses of dark evergreen leaves serve admirably as a setting to the clusters of orange-coloured blossoms, which are at their best in May. The purple berries are very attractive towards the end of the summer. This Barberry forms a delightful lawn shrub, particularly in a fairly moist soil.
B. empetrifolia	Chili	Yellow; Spring	A little evergreen bush less than 2 feet high, and flowering about the same time as B. Darwinii. With this just-named species it shares the parentage of B. stenophylla, which is unsurpassed in the entire genus.
B. nepalensis, Syn Mahonia nepalensis	Nepaul	Yellow	The stateliest of the Ash Barberries, forming a specimen 6 feet high, and regularly furnished with long compound leaves. It is however tender, except in the West of England and Ireland, where, in a moist, fairly open soil, it does well. Even there a sheltered spot should be chosen for it.
B. repens, Syn Mahonia repens	North America	,,	Related to B. Aquifolium, and, like that, will do well in shady spots. It is dwarfer than the other just mentioned.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*B. stenophylla	Garden form	Yellow; Spring	This is a hybrid between B. Darwinii and B. empetrifolia, and a shrub of rare beauty. The slender arching shoots are very graceful, and during the flowering period are completely wreathed with golden blossoms. Standing singly on a lawn, or near water, it is delightful.
*B. Thunbergi	China and Japan	Pale yellow and red; Spring	A spreading shrub 3 or 4 feet high, with flowers not particularly showy, and borne on the undersides of the shoots just as the young leaves are expanding. The bright red berries are very showy, but they are surpassed by the brilliant scarlet of the decaying leaves.
*B. vulgaris (Common Barberry)	Europe	Yellow; Spring	The common Barberry is an ornamental deciduous shrub 8 to 10 feet high, and is valuable from the fact that it will thrive in dry, stony soils. Apart from the pale-yellow flowers in spring, the scarlet berries are very showy, and by some are used for preserves. There are many varieties, the best being the purple-leaved (purpurea) and white-fruited (fructu albo).
B. wallichiana (Syn B. Jamesoni, B. Hookerii)	Himalaya and China	Sulphur Yellow; June	A dense evergreen bush, with dark green spiny leaves and pale yellow blossoms. It grows 4 or 5 feet high.
*Buddleia Colvillei	Himalaya; Loganiaceæ	Rosy crimson; June	A beautiful tree, reaching a height of 30 feet in its native country, but it is hardy only in the extreme West of England and South of Ireland. The blossoms, somewhat like a small Pentstemon, are in large pendulous racemes.
*B. globosa (Orange Ball tree)	Chili	Orange yellow; Midsummer	A deciduous shrub, 10 to 12 feet high, with long, willow-like hoary leaves, and flowers borne in globular clusters about midsummer. It is perfectly hardy in warm soils in the South of England, and is much admired.
B. japonica, Syn B. curviflora	Japan	Lilac; August	This has several well-marked features, forming as it does a deciduous shrub about 4 feet high, with curiously winged stems and long curved spikes of blossoms.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
B. variabilis	China	Rosy purple, Yellowish throat; Midsummer	A free-growing shrub, 6 to 8 feet high, with large panicles of flowers borne about midsummer. As in the case of B. globosa and B. japonica, a warm soil in the South of England is necessary.
Cæsalpinia japonica	Japan; Leguminosæ	Canary yellow; Summer	A very interesting shrub, rambling, and with long flexible shoots with red prickles. The leaves are a foot long, and of a pleasing green; the flowers, which are in partially erect racemes, are about 1 inch across, and bright canary yellow in colour, against which the reddish anthers are conspicuous. It must not be planted where it is likely to get smothered. It has stood out unharmed for many years in the Coombe-wood Nursery (Kingston).
*Calycanthus floridus (American Allspice)	North America; Calycanthaceæ	Purplish red; July	A deciduous, much-branched shrub from 5 to 6 feet high, well worth growing for its highly fragrant flowers, about a couple of inches in diameter. It needs a fairly cool, moist soil.
C. occidentalis (Californian Allspice)	California	Crimson	Much like the preceding, but of more vigorous growth with larger flowers.
Cassandra calyculata (Syn Andromeda calyculata)	North America	White; April and May	An evergreen under-shrub, growing from 1 to 2 feet high. The shoots are arching, and the waxy Lily-of-the-Valley-like flowers are suspended from the undersides in considerable numbers. It is a pretty but by no means showy shrub, and needs moist, peaty soil.
Cassiope fastigiata	Himalaya; Ericaceæ	Pink; Summer	A pretty little erect growing shrub about a foot high, suggesting a Club Moss or a small Conifer, with tiny bell-shaped blossoms. It is suitable only as a rock-work shrub in moist, peaty soil.
C. hypnoides	Siberia	White	Even smaller than the preceding, and needs the same treatment.
C. tetragona	North America and Northern Europe	White	The tiny scale-like leaves of this are arranged in four rows, thus giving the branches a curious square appearance. Succeeds under the same conditions as the others.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Catalpa	Bignoniaceæ		This genus of large deciduous trees is represented in both the eastern and western hemispheres, and contains about a dozen species. Only five of these are at present in cultivation in Britain or are known to be hardy, two being natives of North America and three of China. The Catalpas are some of the most striking and beautiful of all hardy trees, both in regard to foliage and to flower. The leaves are large and bold in outline, and the flowers borne in large terminal panicles towards the end of summer. Catalpas love a rich soil and abundant moisture. They are particularly well adapted for planting on the margins of ponds and water-courses. All the species have this peculiarity: they never form a terminal winter bud. In consequence of this, every shoot branches at its apex into two or three every spring, with the result that the trees naturally acquire a broad, spreading habit. This is especially apparent in the case of isolated trees growing on lawns—a position, it may be mentioned, in which Catalpas are seen to exceptional advantage. In the forests of North America, where they are drawn up by other trees, the Catalpas occasionally attain to heights of 50 feet to 100 feet. In gardens it may sometimes be advisable to help them to reach a moderate height, by keeping them to a single lead when young. All the species can be increased by cuttings of the roots, or of the fairly matured leafy growths.
*C. bignonioides (Syn C. syringæfolia)	Introduced from North America in 1726	Creamy white blotched with yellow, and spotted with purple in the throat.	This species is by far the commonest and best known of the Catalpas in Britain. It does not often attain a stature of more than 30 feet, although in its native woods it is met with twice as high. The broadly ovate leaves are in healthy trees of mature age

Name.	Country or Origin and Natural Order.	Colour and Season.	General Remarks.
Catalpa bignonioides (Syn *C. syringæfolia*)	Introduced from North America in 1726	July and August	about 6 inches long and 4 inches to five inches wide. The flower panicles are erect, branching, and pyramidal, frequently 1 foot in diameter at the base. The flower is 1½ inches across, with a broad bell-shaped base, the reflexed limb being elaborately frilled. The thin, kidney-bean-like fruits are 9 inches to 12 inches long, but in most parts of the country are only produced after exceptionally sunny seasons. The following varieties are in cultivation: Aurea, with rich yellow foliage; nana, a remarkable low shrub, 2 feet to 3 feet high, which never flowers, and can only be regarded as a curiosity; purpurea, with purple-tinged leaves and shoots.
C. Bungei	Northern China	White, spotted with purple; they, as well as the panicles, are larger than in Kæmpfer's Catalpa	Whether the true C. Bungei is in cultivation at the present time is very doubtful. Certainly the plants supplied by some nurserymen under this name are only the dwarf variety (nana) of C. bignonioides. In any case the true C. Bungei has not flowered in Britain. It is a tree 30 feet high, with either entire or lobed leaves; they are 4 inches to 8 inches long, and about three-fourths as wide.
C. cordifolia (Syn species)	United States. It inhabits a more western region than C. bignonioides, and is found in the States of Kentucky, Louisiana, Tennessee, Missouri, Texas, &c.	White, with yellow blotches in the throat; but the purple spots are not so abundant in C. bignonioides, whilst the panicles are large, and appear about a fortnight before	This is probably the finest species of Catalpa, but is not yet well known in Britain. In the United States it is often 50 feet high, and in exceptional cases over 100 feet. Owing to its having been for a long time confounded with C. bignonioides, this species was probably introduced unknowingly, and it may exist in some gardens under the other name. It is said to be somewhat the hardier of the two.
C. Fargesii	China. Introduced to France by M. Maurice de Valmorin, and sent by him to Kew in 1899	.....	Little known of this species yet

CATALPA OR INDIAN BEAN TREE (*Catalpa bignonioides*).

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
C. hybrida	A hybrid between C. cordifolia and C. Kæmpferi. Raised nearly thirty years ago by Mr. John C. Teas in Indiana, U.S.A.	White, with yellow and purple markings on the throat	In the United States this appears likely to prove the finest of all the Catalpas, exceeding even C. cordifolia in the vigour of its growth and the size of its panicles. Four hundred flowers have been borne on a single panicle. Generally, the plant is intermediate between the two species that share its parentage.
C. Kæmpferi	China; introduced by Siebold in 1849	Flowers 1 inch across; reddish-brown and purple markings	Whilst this species—named in honour of Engelbert Kæmpfer, who visited Japan in the seventeenth century—bears a strong resemblance to the American C. bignonioides, it is neither so fine nor so ornamental a tree. It has naturally the same rounded habit, but is never so large. The leaves differ in frequently being more or less lobed. Kæmpfer noted this tree in Japan, and until a recent date it was regarded as indigenous to that country. Recent travellers have, however, concluded it to be (like many other popular trees in Japan) of Chinese origin solely. It is frequent in the grounds surrounding Buddhist temples in Japan.
*Ceanothus americanus (New Jersey Tea)	Eastern United States; Rhamneæ	Whitish; July and August	A deciduous shrub, 3 to 4 feet high, that dies partially back during the winter. The flowers, which are borne in good-sized racemes, are at their best in July and August, and on that account are very valuable. It is one of the hardiest of the Ceanothuses, and in the South of England it will flower as a shrub in the open ground.
*C. azureus	Mexico	Light blue; July and August	This is not quite so hardy as the preceding, and it cannot be regarded as a shrub for the open ground, except in particularly favoured districts. It is, however, a delightful wall shrub. There are many garden varieties of this, mostly of Continental origin, of which may be especially mentioned Gloire de Versailles, blue; Marie Simon, pink; and Indigo, deep blue, very beautiful.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Ceanothus divaricatus	California	Pale blue; May and June	Suitable only for a wall. With this amount of protection it will reach a height of 10 feet.
C. papillosus	California	Blue; May and June	Like the last, it is, except in the extreme west, essentially a wall plant; it is one of the best.
C. rigidus	California	Purplish blue; Spring and early Summer	The leaves of this are small and neat, and its charming blossoms are on a wall borne sometimes as soon as April, and are kept up through May to June. It will reach a height of 6 to 8 feet.
C. thyrsiflorus	California	Bright blue; Summer	In its native country this attains to the dimensions of a small tree, but here it is essentially a wall plant. The flowers are in large racemes.
*C. veitchianus	California	Bright blue; May and June	A species with neat dark-green leaves. It forms a delightful wall plant.
*Cercis Siliquastrum (Judas Tree)	South Europe and West Asia; Leguminosæ	Rose purple, but varies; May and June	Throughout May and early June the Judas Tree is very beautiful, being smothered with pretty pear-shaped red blossoms. At Kew it flowers well in numerous places. It grows to a height of 20 feet or more in the Mediterranean region, though in gardens here it is more often represented by bushes of less than half that height. It thrives in sandy loam, and likes plenty of sun and air. The flowers are produced from all parts of the stems, much of the old wood being often smothered with flowering spurs. A variety with white flowers is in cultivation, and this may also be seen in flower at Kew. In addition to this species, C. canadensis, from North America, and C. chinensis, a native of China and Japan, are also grown, whilst a fourth species, C. reniformis, from Western China, has lately put in an appearance, but it has, however, so far proved more tender than the others.
*Chionanthus retusus (Fringe Tree)	Japan; Oleaceæ	Pure white; Early Summer	This Chionanthus furnishes one of the many illustrations of the close affinity that exists between the flora of the United States and that of Japan, for it is very nearly related to the American

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Chionanthus retusus (Fringe Tree)	Japan; Oleaceæ	Pure white; early Summer	Fringe Tree (Chionanthus virginicus), from which, however, it differs in being a a smaller and more slender plant, while the clusters of flowers are rather less dense. When in bloom there is no danger of confounding these Chionanthuses with any other tree or shrub, as the pure white drooping fringe-like inflorescence is totally distinct from anything else. They are quite hardy, and not particular as to soil, though a fairly deep loam suits them best.
C. virginica (American Fringe Tree)	North America	White, narrow, fringe-like petals; hence the name	An interesting bush, but taller in its native country.
*Choisya ternata (Mexican Orange Flower)	Mexico; Rutaceæ	White; Summer, but much depends upon position	This is a shrub for warm soils and sunny position, when it makes a big, leafy, glossy-leaved bush, smothered with clusters of white flowers that, from their appearance and fragrance, have earned the shrub the name of Orange Flower. At Munstead in Surrey it grows so rampantly that it has to be cut away to keep it within reasonable bounds. In "Wood and Garden," p. 63, it is mentioned, the month is May; "The Mexican Orange Flower (Choisya ternata) has been smothered in its white bloom, so closely resembling orange blossom. With a slight winter protection of fir boughs it seems quite at home on hot dry soil, grows fast, and is very easy to propagate by layers. When cut it lasts for more than a week in winter."
Cistus albidus	South-West Europe; Cistineæ	Bright rose; June and July	A shrub 4 to 5 feet high, with whitish leaves (hence the name of albidus) and a profusion of blossoms 2 inches across. It needs a dry, warm soil, hence will succeed on sloping banks, but even then, in the South of England, it is apt to be killed by a very severe winter. This last paragraph will apply to the genus Cistus in general.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Cistus crispus	Southern Europe	Reddish purple; Summer	Reaches a height of a couple of feet, and bears its saucer-shaped blossoms in great profusion. The individual flowers are about 2½ inches in diameter.
*C. ladaniferus (Gum Cistus)	South-West Europe	White; Summer	A bush 4 to 5 feet high, with large, white, solitary flowers, The variety maculatus has a crimson blotch at the base of each petal.
*C. laurifolius (Laurel-leaved Cistus)	South of Europe	White; July and August	A sub-evergreen shrub 5 to 6 feet high, and the hardiest of all the Cistus. Of this there is also a variety maculatus blotched at the base with purple crimson, which forms a delightful shrub.
C. monspeliensis	South of Europe	White; Summer	A compact bush 4 feet high, with flowers about an inch across.
C. populifolius (Poplar-leaved Cistus)	Levant	White; Summer	The leaves of this are very distinct, being heart-shaped and long-stalked, whilst the plant itself will attain a height of 6 feet.
C. purpureus	South-East Europe	Reddish purple with a maroon blotch	This is only suitable for planting in the West of England, but where not injured by frost it is a delightful shrub, a little over a yard high.
*C. villosus	Mediterranean region	Reddish purple	A compact shrub, whose reddish-purple blossoms are about 2½ inches across.
Cladrastis amurensis (Amoor Yellow Wood)	Amoorland; Leguminosæ	Whitish; July	A very distinct shrub or small tree, which is perfectly hardy, and has peculiarly greyish-green leaves. The dense spikes of small, pea-shaped blossoms are showy when at their best. This has deep descending roots, and holds its own in sandy soils better than most shrubs.
*C. tinctoria (Virginian Yellow Wood. Syn Virgilia lutea)	North America	White	A tree, 30 feet high, clothed with large ornamental pinnate leaves, which die off a rich yellow. The flowers are white, and in dense drooping racemes. A fairly moist soil is necessary for this.
Clethra alnifolia	United States of America; Ericaceæ	White; August and early September	In the United States of America the White Alder or Pepper Bush, as Clethra alnifolia is called, occurs as a native over a considerable area; hence several forms exist, but do not possess any strongly marked features, unless it be the variety tomentosa, which is certainly the most widely

CISTUS VILLOSUS.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Clethra alnifolia	United States of America	White; August and early September	removed of all from the typical kind. As a rule the flowering period of the common White Alder extends throughout August and a little way into September, at which last-named period the variety tomentosa is just unfolding its earliest blossoms. As the number of flowering shrubs that are at their best during the latter part of September is very limited, the blooming of this variety of the Clethra at that time makes it valuable. The varietal name of tomentosa is derived from the whitish down on the undersides of the leaves, which serves to readily distinguish it from the other forms. The flower-spikes, too, are rather larger, while the blossoms are as in the others—white. The Clethras all form rather loose-growing bushes from 3 feet to 5 feet high, and delight in a moist soil of a peaty nature, such as that in which Rhododendrons, Azaleas, and others of that class flourish.
C. canascens	Japan	Milky white; Summer	A very handsome species with dark-green leaves and panicles of blossom. Well worth attention, but is yet rare.
Colutea arborescens (Bladder Senna).	Mediterranean region; Leguminosæ	Yellow; May and June	A perfectly hardy, free growing, deciduous shrub, reaching a height of 8 to 12 feet, clothed with pretty divided leaves, and with a profusion of pea-shaped flowers, succeeded by large inflated seed-pods, which form a very noticeable feature. These pods are green, tinged with red. The Coluteas are very useful, as they will thrive in dry sandy soils where many shrubs would perish.
*C. cruenta, Syn C. orientalis, Syn C. sanguinea.	Orient	Reddish	After the manner of the last, from which it differs in its glaucous leaves, reddish flowers, and deeper-tinted seed-pods. It is also somewhat dwarfer.
Coronilla Emerus (the Scorpion Senna Coronilla)	Southern Europe; Leguminosæ	Yellow-tinged red; May and June	A free-growing bush 6 feet high, with a profusion of pea-shaped blossoms. It needs a well-drained, warm soil.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Coronilla juncea (the Rush-like Coronilla)	South of France	Bright yellow	An erect shrub less than a yard high, with rush-like shoots, suggesting those of the Spanish Broom, and also almost devoid of leaves. When in full bloom it is decidedly pretty.
*Corylopsis pauciflora	Japan; Hamamelideæ	Primrose; Spring, before the leaves	This delightful little shrub, when fully grown, makes a dense bush, with branches 6 feet high. The leaves are small, thin in texture, prettily tinted when young, and again in autumn. The flowers are primrose-yellow in colour and fragrant. They are arranged from two to four together in drooping catkins from every node on the previous season's wood. Though it is quite hardy in other respects the flowers are easily damaged by frost.
C. spicata	Japan	Also cowslip-coloured and scented. Before the leaves in Spring	A shrub between 3 and 4 feet high, and better known than C. pauciflora.
*Cytisus albus (White Spanish or Portuguese Broom)	Spain and Portugal; introduced in 1752; Leguminosæ	White; May	A beautiful and popular Broom. It grows with great rapidity, and flowers bountifully and regularly. A bush 6 or 7 feet high, in full flower is a delightful picture, and one never seems to tire of it. Group it with the common Broom. It is very cheap and easily raised from seed. Loudon says: "In good soil it is of very rapid growth, attaining the height of 5 feet or 6 feet in three or four years, and in six or eight years growing as high as 15 feet or even 20 feet if in a sheltered situation. Placed by itself on a lawn it forms a singularly ornamental plant, even when not in flower, by the varied disposition and tufting of its twiggy thread-like branches. When in flower it is one of the finest ornaments of the garden." Loudon also says that bees are fond of the flowers.

CYTISUS CAPITATUS.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Cytisus albus incarnatus	Variety	Pinkish	Rare, and not so beautiful as the parent.
*C. Ardoini	Maritime Alps	Pure yellow; April and May	Quite a dwarf Broom, a few inches high. It is a charming Broom for the rock garden, placing it where it can spread out its shoots on all sides. It is happiest in sun and dry soil as the other Brooms.
*C. austriacus (Austrian Broom)	Native of Austrian woods, also of Italy and Siberia. Introduced in 1741	Yellow; July and August	C. banaticus and C. serotinus are synonyms. The chief value of this Broom is in its late flowering, when its yellow flower clusters are very welcome.
C. a. leucanthus	Variety	Very pale yellow, sometimes almost white	Not important.
C. biflorus	Hungary	Bright yellow; May	This is not so important as the Moonlight Broom, Andreanus, and some others. It grows about 3 feet high, but even in a group it is not imposing.
C. capitatus	Found on wood edges in Austria and introduced in 1774	Yellow; June	This is also a dwarf and not important Broom.
C. hirsutus	Asia Minor and South of Europe. Introduced in 1739	Yellow; June	This is another dwarf and unimportant shrub.
*C. kewensis	Hybrid between C. albus and C. Ardoini	Creamy white; May	A most interesting and beautiful Broom, which, as it becomes better known, will be popular in gardens. It was raised in the Royal Gardens, Kew; hence the name, C. Ardoini being the seed parent. It is only suitable for the rock garden, where its slender shoots can spread out and form a mantle of soft colouring, or to make a spreading group on the grass. There is little trace in it of C. albus, except in the flower colouring. This is a Broom for all good gardens.
*C. nigricans	Austria	Bright yellow; July and August	This is also a lovely Broom, so named because it turns black when dried. It should be in the smallest list of beautiful flowering shrubs, and it is singular that it is so seldom seen. The growth is bushy and smothered with flowers in July and August, sometimes before, and lasts a long

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Cytisus nigricans	Austria	Bright yellow; July and August	while in beauty. Sunshine and poor soil bring out its finest qualities. One can scarcely say too much in its praise, especially as it blooms at a time few trees and shrubs are in flower.
*C. præcox	Hybrid between C. purgans and C. albus	Sulphur yellow; April to May	One of the most fascinating of all flowering shrubs. It makes clouds of soft colouring, every shoot hidden with the wealth of bloom; whilst when out of flower there is beauty in the brilliant green colouring of the long slender shoots. It is a shrub to make groups of in the flower garden, grows quickly, does not soon get "leggy," and is very dense. The big groups of it on the grass in the Royal Gardens, Kew, are one of the delights of the spring season there. The ordinary shrubbery is the worst place for it, all its gracefulness is lost, there is no fountain of flowers from the slender shoots. It is best raised from cuttings, as seedlings are apt to reproduce C. albus only. Also well known as Genista præcox.
C. purgans	South and Central Europe	Yellow	Chiefly of note because it is one of the parents of C. præcox, but is of little account for the English garden. It is necessary in a collection, but nowhere else.
*C. purpureus	Found in Eastern Europe in exposed situations.	Purple	A delightful shrub when properly placed. Loudon's advice to graft it "on the laburnum standard high" is bad, and has been followed in many gardens. This way of treating the shrub is utterly foreign to its nature; it is a *trailing* Broom, and therefore should be planted on the rough garden or some bank where it can spread in its own way. We have seen it falling over a boulder and making a trail of purple colouring in May. Rare varieties are albus, white, and one with flowers of rose tint. The famous Cytisus Adami is the outcome of grafting this species on the Scotch laburnum (L. alpinum). This curious graft-

MOONLIGHT BROOM (*Cytisus scoparius var. pallidus*) *See p. 020*

A HYBRID BROOM (Cytisus kewensis) AT KEW. *See p. 017.*

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Cytisus purpureus	Found in Eastern Europe in exposed situations	Purple	hybrid usually excites much interest when in flower, both yellow and purple racemes appearing on the same tree.
C. sessilifolius	A native of the south of France and Piedmont, and was cultivated in Britain by Parkinson in 1569.	Yellow; May	A Broom for a collection, but without the effectiveness of C. præcox, Andreanus, and others.
C. Schipkænsis	Introduced	White	This is a charming little rock-garden shrub, and very rare as yet, but well worth noting for its distinctiveness and freedom.
*C. scoparius (Common Broom)	Europe	Yellow	The hardy Cytisuses are popularly known as Brooms, and the Broom of the waste lands of the British Isles is Cytisus scoparius, which makes clouds of golden yellow in the early summer. Many a dryish bank now flowerless might be made beautiful with this glorious shrub. Where Broom is not plentiful as a wild plant, and therefore generally where the soil is not suitable for it, the soil should be made so; it need only be well drained and open.
*C. s. andreanus	Choice variety found in Normandy by M. Ed. André, after whom it is named.	Brownish crimson and yellow; Spring	This varies considerably from seed, and often reverts to the typical yellow Broom. If possible get own root-plants from original stock. A beautiful shrub, which we can scarcely have too much of, but in some gardens it is used too freely. When in full bloom, and the variety is rich in colouring, it is superb.
C. s. pendulus (Drooping Broom)	Variety	Pale yellow	Quite a pendulous variety, but uncommon. It is apparently little known, though so charming when on a bank or rock garden. A group of it in either of these positions would be a revelation to those who know not the value of this family for the English garden.
*C. s. sulphureus (pallidus), (Moonlight Broom).	Variety	Pale yellow	Described by Loudon in his "Arboretum" as C. s. albus, "the flowers white or of a very pale yellow." It is a rare shrub, but should not be so. Mr. Goldring writes of it in "The Garden" as

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Cytisus scoparius sulphureus (pallidus), (Moonlight Broom)	Variety	Pale yellow	follows: "The Moonlight Brown is a very old variety, as it was described by Loudon sixty years ago, but it is still a rare shrub, not easily obtainable, though it is grown in some of the largest nurseries. Its pale yellow flowers are in beautiful harmony with the rich yellow of the type Andreanus. The only private garden where I have seen it in established mass is in that of Mrs. Robb at Liphook, where all kinds of tree and shrub varieties are treasured. I do not know if it comes true from seed, but I fancy not."
C. s. flore-pleno	Variety	Yellow	A so-called double variety in which some of the petals are duplicated, but it is not finer than the type, though it is interesting as one of the few double varieties in pea-shaped flowers.
Cratægus (Thorns)	Rosaceæ	.....	The Cratægus family comprises nearly 100 species and varieties, contains some of the most beautiful of small garden trees, both with regard to the charm of their white, pink, and scarlet flowers, and the scarlet, black, and yellow fruits. Most of the Thorns are either large shrubs or small trees, and are specially suitable for small gardens, whilst none of them require particular attention, as all will grow in almost any soil and situation. Old trees occasionally require to be relieved of small wood and decaying branches, and a good top-dressing of manure is beneficial sometimes to those which flower and fruit freely; but beyond this thorns need no attention after they have been planted and become established. The species can be increased by seeds, which are obtained by gathering the fruits when ripe, and mixing them with sand. The mixture of fruits and sand should then be put in a heap in a sheltered place out-of-doors, and covered with a few turfs. By the

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Cratægus (Thorns)	Rosaceæ	.....	following spring the fruits will have rotted, and the seeds can be separated and sown. A fair proportion will germinate the first year, and the remainder the second. Many of the thorns can also be propagated by root cuttings. For this purpose healthy, vigorous shoots, as thick as a man's finger, should be obtained in autumn or winter, and cut into pieces four inches to eight inches in length, cutting the end nearest the stem flat, and the other slanting, so that either end can be readily distinguished. These should be inserted upright in the ground, with the tops nearly or just covered; they soon form roots, and grow into strong plants. The genus is found practically throughout the temperate region, from Europe throughout the East and Central Asia to China and Japan, and in North America. One species is found in Mexico—but this, and in fact all the Thorns are hardy in this country.
*C. Azarolus	South-East Europe and Asia Minor	Pure white; late Spring	This grows to a height of about 20 feet. It is very showy, and has pure white flowers followed by large yellow fruits; the leaves are about twice the size of those of the Hawthorn, and rather deeply cut. Cratægus Aronia is a synonym.
*C. Carrièrei	A reputed hybrid, but parentage unknown. Supposed to be C. mexicana and C. tomentosa	Pure white; late Spring	A very handsome Thorn, 12 feet to 15 feet, shapely, leaves large, bright glossy green above, whitish beneath. Flowers appear freely in large corymbs, followed by clusters of pear-shaped green fruits, which hang on the tree until the end of the year, changing finally to dull, yellowish red.
*C. coccinea (the Scarlet Thorn)	North America; introduced in 1683	White; late Spring	This is one of the most striking of all the thorns; it has large bright-green leaves, and flowers nearly an inch across, and in dense corymbs. These are followed by clusters of brilliant scarlet-coloured fruits. There are several varieties equal to or even

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Cratægus coccinea (the Scarlet Thorn)	North America; introduced in 1683	White; late Spring	finer than the species. One is *Macracantha, which has spines sometimes 5 inches long, and bright scarlet haws, not so large as those of the species, but produced more abundantly. It should be more frequently seen in gardens, and is worthy to rank as a species. Indentata has deeply-cut leaves and bright-red fruits.
*C. cordata (Washington Thorn).	North America	June; white	This is a small tree with thin, glossy, heart-shaped leaves and small flowers, orange-red fruits, not unlike those of C. Pyracantha, and carried late in the year. Birds, however, enjoy them.
C. Crus-galli (the Cockspur Thorn)	North America	June; white	This is a handsome American Thorn, and one of the most striking of the whole family. It has stout, glossy leaves and formidable spines, these often being from 3 to 4 inches long, and gave rise to the popular name. The brick-red fruits hang on the tree long after the leaves have fallen, and make a bright winter picture. There are several varieties. Arbutifolia has shorter spines and smaller fruits than the type; the leaves are also narrower and duller in colour; linearis has long linear leaves and bright-red fruits. Ovalifolia has large oval shining leaves and bright scarlet fruits, it is rather more upright than the type. *Splendens makes a handsome, shapely tree about 20 feet high, and flowers and fruits very freely; the leaves are rounded, green, and shining, and the flowers pure white, in small corymbs, and followed by bright-scarlet fruits.
C. Douglasii	Western side of North America	White; late Spring	This is a large irregular-shaped tree 20 feet to 30 feet, and has short stout spines about an inch long; the flowers appear in small clusters, and the fruits are small and black. Wood and spines are brown and quite shiny. Rivularis has smaller and thicker leaves, and shorter and stouter wood.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Cratægus hiemalis	Probably a hybrid, but origin unknown	White; Spring	A tree 15 feet to 20 feet high, round shining leaves, and rather large black fruits, which are the first to ripen of the Thorns.
*C. melanocarpa	Caucasus	White; Spring	A very handsome Thorn. It is a small flat-topped tree of medium height, the leaves somewhat like those of the Hawthorn in shape, and covered with a thick grey tomentum; the fruits are small, black, and shining.
C. mollis	United States	White, with a small red mark at the base of each petal	Like C. coccinea, but even handsomer. It is a small tree, 15 feet high, with spreading head, and large firm leaves slightly woolly on the back; the flowers are large, and succeeded by bright-crimson, medium-sized fruit.
C. nigra	Eastern Europe	White; May	This makes a fair-sized tree, and has small black fruit. The foliage is very abundant, deeply cut, and woolly on both sides. It almost hides flowers and fruit.
*C. orientalis	Europe	White; May	A handsome Thorn in fruit. It is a small flat-topped tree, and has large clusters of flowers, the oval fruits being yellowish red. Sanguinea is a very showy variety, with deep ruby-red fruits, but the scarlet colour of the type is brighter.
*C. Oxyacantha (Hawthorn, White Thorn, May)	Widely distributed, Europe, Western Asia, and North Africa	White; May	Too well known to describe. It has been divided into two sub-species, viz. C. monogyna, in which there is usually only one style in the flowers and one seed in the fruit, and C. oxyacanthoides, where the number of styles is usually three, and from two to four seeds in the fruit. These differences are generally decided. There are other differences also in growth difficult to explain, but can be detected easily by an experienced eye.
C. monogyna (sub-species)	.....	.....	This is the Hawthorn of the hedgerows, and there are many varieties. Twenty-eight are recorded in the Kew Hand-list. The most beautiful are aurea, with golden-yellow haws, crispa pendula, a pretty weeping tree; Gumperi versicolor,

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Cratægus monogyna (sub-species)	.....	.....	very handsome deep-red, shading to pink in the centre; laciniata, a handsome tree with deeply cut leaves, sometimes called C. apiifolia, but must not be confounded with North American species of that name. Macrocarpa has larger fruits than the type, oxyphylla, large white flowers and handsome fruits, a round-headed tree. Præcox is the Glastonbury Thorn, supposed to flower at Christmas, but rarely does so owing to frost. This is the Thorn which is associated with the famous legend. *Semperflorens is a good variety, a low-growing tree, which flowers for a much longer period than the other Thorns. Stricta makes a dense upright-growing tree, 30 feet or more high; it grows rapidly, and when in flower is strikingly distinct in appearance.
C. oxyacanthoides (sub-species)	.....	.....	This is distinguished from C. monogyna by the styles and seeds as stated above; and also by the larger leaves, flowers, and fruit, All the double-flowered Thorns belong to this section. Atrofusca, a large, shapely tree, of weeping growth; the flowers large, pure white, and the fruits fair sized and abundantly produced. *Flore-pleno albo, the double white Thorn, with purest white flowers. This, like the other double Thorns, rarely fruit. *Flore-pleno coccineo, the double Scarlet Thorn, one of the most beautiful of trees when covered with its scarlet flowers. Very pleasing when grouped with the double white variety or the Laburnum; *Paul's double Scarlet, a well-known and beautiful Thorn. *Flore puniceo, a rich purplish pink, single, and fructu luteo, bright yellow fruits, effective in autumn.
*C. pinnatifida	China and Central Asia	Pure white; May	The variety *major is the best to grow. It is stronger, and has very large leaves,

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Cratægus pinnatifida	China and Central Asia	Pure white; May	4 to 6 inches long, thick and shining. It does not show its true beauty until of some age, but it is a hardy tree of great beauty. The flowers are in large corymbs, and the fruits are of an intense shining red, pear-shaped, and make a bright picture in autumn. This variety is often labelled C. Layi.
*C. punctata	East and North America	Variable	A good garden tree; it is variable, but the accepted type has white flowers and bright red fruits as large as a small Crab apple. Another form has smaller deep ruby-red fruits. Brevispina, striata, and xanthocarpa are varieties, the last mentioned with bright yellow fruits.
*C. Pyracantha (Fiery Thorn)	South Europe, in hedges and rough ground	White	An evergreen Thorn. Introduced in 1629, and a well known shrub. Its charms consists in its dense glossy leaves and brilliant masses of scarlet berries. It can be grown as a bush or trained up a wall or trellis. It is so brilliant when in fruit that the French call it buisson ardent, or Burning Bush. This Thorn should be more grown as a bush, and not confined as it usually is to a south wall. As the fruits are bitter they are not cared for by the birds, and thus make a display through the winter. Lælandi is a variety with larger and deeper coloured fruits.
C. sanguinea	Siberia	White; May	This is not of great garden value, but effective in winter owing to the red bark. Songorica is a variety also with reddish bark.
*C. tanacetifolia (Pansy-leaved Thorn)	Levant; introduced 1789	White; May	This is rare, and can be recognised by bracts at the base of the fruits. The fruits are very large, yellow, and of good flavour, and eaten in the native country of the tree. The specimen at Kew flowers regularly and abundantly every year.
C. spathulata	United States	White; May	A very distinct Thorn, small, and the leaves are persistent, remaining on until the New Year. The fruits are very small and scarlet.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Cratægus tomentosa	Eastern United States	White; June	A late flowering and handsome Thorn when its orange-yellow are in perfection, but the birds soon consume them.
C. uniflora	North America, and introduced by the famous tree bishop, Bishop Compton, in 1713	Creamy white; early June	More curious than beautiful; it is only 2 feet to 3 feet high and has greenish haws.
Cyrilla racemiflora	Florida to North Carolina, &c. Cyrillea	White	Quite a shrub, 4 feet to 6 feet high, very rare, although introduced as long ago as 1765. The flowers are in drooping racemes on previous season's growth.
*Daboëcia polifolia, St. Daboëc's Heath (Syn Andromeda Daboëcia)	Western Europe and Ireland; Ericaceæ	Rosy purple, bell-shaped; May, and throughout Summer and Autumn	A pretty little Heath-like shrub growing about 18 inches high, and producing erect spikes of comparatively large bell-shaped blossoms. It is the most continuous blooming of its class. There is a beautiful pure white variety—alba.
Daphne alpina (Alpine Daphne)	Alps of Europe; Thymelæaceæ	White; May and June	A spreading deciduous shrub, with white, sweet-scented flowers. It grows about a couple of feet high, and is essentially a shrub for the rockwork, as it is particularly happy when the roots are wedged between stones.
*D. blagayana	Carniola	Ivory white; March and April	Like the last, this forms a spreading bush, and is equally at home under similar positions. It is, however, of an evergreen character; the ivory white are very sweet-scented blossoms. It is worthy of a place among the most select Daphnes.
*D. Cneorum (Garland Flower)	South Europe	Bright rose; May to June	A delightful little evergreen, with highly fragrant blossoms. A good proportion of vegetable soil is necessary to its welldoing.
D. Genkwa (Japanese Lilac)	Japan	Lilac	In its flowers this Daphne closely resembles the Lilac, so that it is frequently mistaken for that well-known shrub. It needs the protection of a wall in most parts of England.
D. Laureola (Spurge Laurel)	South Europe and North Africa	Yellowish green	The flowers of this are not particularly showy, but as an evergreen bush some 3 or 4 feet high it is valuable from the fact that it will thrive under the drip of trees, and is one of the few evergreens absolutely rabbit proof.

GARLAND FLOWER (Daphne Cneorum) ON SUNNY BANK, EDINBURGH.

ERINACEA PUNGENS. (*See p. 028.*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Daphne Mezereum (the Mezereon)	Northern Europe	Red; early year	This is an upright deciduous bush that flowers in February or March according to the season. At that time the still leafless branches are packed for some distance with the pretty fragrant blossoms, so that it may be regarded as the most showy shrub at that time in bloom. There is a variety (alba) with white blossoms, and another (autumnalis or grandiflora) that blooms before Christmas. A cool, loamy soil suits this best.
*D. oleoides (Syn D. fioniana, Syn D. neapolitana)	South Europe	Purplish rose	A neat growing evergreen bush about a yard high, whose flowers are often borne throughout the greater part of the year. It is less attractive than some of the others.
D. pontica	Asia Minor	Yellow	A good deal in the way of Daphne Laureola, but the flowers are of a brighter yellow, and are borne in April and May, whereas D. Laureola flowers in February and March.
D. sericea (Syn D. collina)	.....	Deep pink	A compact evergreen 2 to 3 feet high, clothed with dark-green box-like leaves, while the terminal clusters of flowers are borne in early Spring. It prefers a cool, fairly moist, yet well-drained soil.
*Deutzia crenata (Syn D. scabra)	Japan; Saxifrageæ	White; Midsummer	A bold growing and handsome deciduous shrub, with white blossoms. There is a double-flowered variety, tinged with purple on the outside, known as D. crenata flore-pleno purpurea. Both are beautiful shrubs that will thrive in most soils.
*D. discolor purpurascens	China	White, tinged purple; late May	This has pretty purple-tinged blossoms borne in flattened corymbs, and not, when in the bud state, liable to be injured by late spring frosts.
*D. gracilis	Japan	White; Spring	The best known of all the Deutzias, forming a compact bush a couple of feet high, and bearing masses of its pretty white blossoms.
*D. hybrida	Hybrid	White and pink	There are now several beautiful hybrid Deutzias, viz., hybrida rosea, hybrida venusta, kalmæflora, Lemoinei, Lemoi-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Deutzia hybrida	Hybrid	White and pink	nei compacta, all of which merit a place in gardens.
*D. parviflora	China	White; end of April and early May	An upright shrub 5 feet high, with flattened clusters of white blossoms, very suggestive of those of the Hawthorn.
Enkianthus campanulatus	Japan; Ericaceæ	Dark red	A very charming and interesting shrub resembling one of the Andromeda. A tree in its native country. The flowers are pendent and in clusters.
Epigæa repens (Trailing Arbutus, Ground Laurel, Mayflower)	Ericaceæ. The most popular of wild flowers in New England	Pale white, with pink tint; very sweetly scented; Spring	In Bailey's "Cyclopædia of American Horticulture" it is mentioned: "The cultivation of the Trailing Arbutus, especially in districts where it has been exterminated by ruthless 'mayflower parties,' always attracts interest. . . . Occurs in sandy and rocky woods, especially under evergreen trees, in earliest Spring. Thrives only in humid soil and shady situations. Transplanted with difficulty. Best on north side of a hill in bright, sandy soil, mixed with leaf mould. Once established, it spreads rapidly. Propagated by division of old plants, layers, or cuttings. Seeds are rarely found, but when found may be used, though slow to develop." My experience is that it likes a damp, shady ditch side in peaty soil. Mr. G. F. Wilson planted it near to Shortia galacifolia, and the two were quite happy together.
Erinacea pungens	Spain; Leguminosæ	Blue; May and June	Somewhat resembling the dwarf-growing Genistas is this extremely rare and pretty little shrub. It grows very slowly, and seldom attains a height of 9 inches, spreading out in a mat-like mass rather than growing in an upward direction. The branches are short, stiff, and spiny, and what few leaves there are are small. The pea-shaped blossoms come from the axils of short, spiny branches, and are blue. This plant has been in cultivation for a great number of years, never, however, having become at all common. This

THE MAY-FLOWER (*Epigæa repens*). (*Shortia galacifolia is the top flower.*)

ESCALLONIA PHILLIPPIANA (*Kew*).

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Erinacea pungens	Spain; Leguminosæ	Blue; May and June	is no doubt due to the great difficulty there is in propagating it. Seeds appear to be the only means of increase, and these are borne very sparingly even when the plant is growing under natural conditions. It has been said to be a tender plant, but it has withstood several winters out of doors at Kew without injury. Plants are to be seen there near the Temperate house, and they flower every year.
Escallonia illinita	Chili; Saxifrageæ	White; Summer	A neat evergreen shrub 4 to 5 feet high, with pretty white flowers. It is only in mild districts, such as the South and West of England, that the Escallonias are seen at their best.
*E. macrantha (Syn E. Ingrami)	Chiloe	Crimson red; Summer	The finest of all the Escallonias, and one of the hardiest. It is a free-growing shrub over 6 feet high, clothed with rich green shiny leaves, and the bright-coloured fuschia-like flowers are freely borne. It is a good wall-plant, and stands the sea-breeze well.
E. langleyensis	Hybrid	Rose carmine	Raised by Messrs. J. Veitch between E. philippiana and E. macrantha. It has small, dark-green leaves, and an abundance of brightly coloured flowers. A good shrub.
E. montevidensis (Syn E. floribunda)	Montevideo	White	Grows from 8 to 10 feet high, and bears its clusters of white flowers in great profusion. It is too tender for planting except in the extreme West of England and in Ireland.
*E. philippiana	Valdivia	White; Summer	Will succeed as a bush in the neighbourhood of London, where its small white flowers are borne in the greatest profusion.
E. punctata	Chili	Deep red; July	A much-branched evergreen shrub 5 to 6 feet high.
E. rubra	Chili	Red; Summer and early Autumn	Differs from the last in the absence of spots on the young leaves, in the flowers being rather lighter in colour, and borne for a longer period.
*Forsythia (Golden Bell) intermedia	Oleaceæ; hybrid between F. suspensa and F. viridissima. Represents the two parents.	Yellow; Spring	This is a charming early shrub. It may be either grouped or trained, but one has to be careful not to make it too stiff. It is quite hardy, and a bush.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Forsythia suspensa (Syn F. Fortunei and F. Sieboldi)	China	Yellow; Spring	A graceful and beautiful rambling shrub, now well known. It succeeds well in London—that is, if given anything like favourable conditions. A fence fully exposed to the sun in a London backyard is clothed with it, and each recurring spring the Forsythia flowers profusely, and forms an object of great beauty. Immediately the season of blooming is past the plant is severely pruned, the old and exhausted wood being cut out and the vigorous shoots spurred back to within three or four eyes of the base. This results in the production of long, wand-like shoots, which are allowed to develop at will, hence they dispose themselves in a loose and informal way, and being from the position of the plant thoroughly ripened, the spring display is in every way satisfactory. When autumn pruning is done the best portion of the flowering wood gets cut away.
*F. viridissima	China	Yellow; Spring	Quite a bush, and very handsome when in full bloom. Likes full sun and air.
Fraxinus Ornus (Flowering Ash), (Syn Ornus europæa)	Mediterranean region and Orient	Creamy white; late May	This is a very charming lawn tree with luxuriant panicles of flowers, and foliage like that of the common ash. Angustifolia, latifolia, and variegata are varieties.
F. floribunda (Syn Ornus floribunda)	Himalaya	White; Summer	Rather tender, but very vigorous and handsome.
FUCHSIA.—Though the genus Fuchsia is an extensive one, most of them are of more value in the greenhouse than outdoors—that is to say, throughout the greater part of the country. Still there are a few quite hardy Fuchsias, for, even if cut to the ground during severe winters they soon recover, while in particularly favoured districts, such as in the West of England and the Isle of Wight, they grow unchecked into large bushes, and sometimes make delightful hedges. Few flowering shrubs are more beautiful than F. corallina and F. Riccartoni when in full bloom. The hardiest are :—			
*Fuchsia corallina (Syn F. exoniensis)	Garden origin; Onagraceæ	Red; Summer and Autumn	A plant of more vigorous growth, and with larger leaves and flowers than any of the other hardy Fuchsias. It is very popular in the West of England, but is not nearly so effective when cut to the ground each winter as some of the others are.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Fuchsia globosa	Chili	Red; Summer and Autumn	A free-growing Fuchsia which, if cut to the ground, pushes up long, wand-like shoots that branch out freely, and towards the latter part of the summer are smothered with bright-coloured flowers. In the bud state these are of a globose shape, hence its specific name.
*F. gracilis	Mexico	Red; Summer and Autumn	The name gracilis well expresses the prominent features of this Fuchsia, for, though as vigorous as globosa, it is far more slender and graceful. Where not perfectly hardy the drooping flowers are seen to great advantage when the shrub is trained to a wall, and planted in a permanent bed the old stools will, even in the North of England, pass unscathed through the winter, if protected by a mulch of decayed leaves.
*Fuchsia Riccartoni	Garden Origin	Red; Summer and Autumn	This has the reputation of being the hardiest of all the hardy Fuchsias. It is in appearance about midway between F. gracilis and F. globosa, and is as good as F. gracilis.
*Garrya elliptica	California; Cornaceæ	Greenish; Winter and very early Spring	A handsome evergreen shrub with very dark green, leathery, oval leaves, about 3 inches long. Its most notable feature is the long, pendulous male catkins, with which the plant is freely draped during the early months of the year. This Garrya is all the better for the protection of a wall in most parts of the country. The male and female flowers are borne on separate plants, the male being, owing to its catkins, by far the most ornamental.
Genista	Leguminosæ	.....	A popular group of shrubs, allied to the Cytisus, and delighting in dry sandy soils. A group of the finer species is very rich in colour when in flower.
*G. æthnensis	Slopes of Mount Etna, in Sicily	July and August; Golden yellow	This Broom is perfectly hardy near London. It is one of the rarest of shrubs in gardens in spite of its beauty, and it flowers in July and August, a season

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Genista æthnensis	Slopes of Mount Etna in Sicily	July and August; golden yellow	when even inferior flowering shrubs are not plentiful. It has a rather gaunt, yet not inelegant habit, and assumes a somewhat tree-like form when old, being often reduced to a single stem at the base. It carries, however, a wide head of thin cord-like, arching or pendulous branches, with little or no foliage except when the wood is quite young. The flowers are of a rich golden-yellow, and during the series of hot summers we have experienced in recent years have been especially abundant. It would, indeed, be difficult to find a shrub better adapted for hot, light soils than this, a fact that is amply proved by the way it succeeds at Kew. It is a good plant for associating with medium-sized evergreens, which hide its bare stems and render it more effective when in flower. It grows 10 feet to 14 feet high, and is thus one of the tallest—if not the tallest—of the Brooms hardy in Britian. It ripens seed freely, and is best propagated by that means.
G. cinerea	South-West Europe	Yellow; July	This is a shrubby plant for the rock-garden in sunny places.
*G. hispanica	South-West Europe	Yellow; July	A dwarf and charming shrub, 1 foot to 2 feet high, and when in bloom covered with flowers. One of the best of its race.
G. monosperma	Sicily	White	Not well known but interesting. Sandy soil.
G. pilosa	Europe, England	Rich Yellow; May and June	A prostrate plant for the rock garden. Ordinary soil.
*G. radiata	Central and Southern Europe	Yellow; Summer	Very beautiful when in full flower on the rock garden, and will even succeed in a rough wall.
G. sagittalis	Europe	Yellow; May and June	Another dwarf species for rock garden.
G. tinctoria	Britain	Yellow; July and September	The double variety flore-pleno and elatior are finer than the species. Elatior makes quite a bush and is very attractive when in full bloom.

GENISTA (*Ulex*) *HISPANICA. SPANISH FURZE.*

THE SPANISH FURZE ON ROUGH SLOPE.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Genista virgata	Madeira	Yellow; June and July	This must attain a certain age and size before it displays its full beauty, small plants flowering sparsely or not at all, while older specimens are a glorious sight during the period of flowering. Thoroughly hardy in at least the southern half of England, self-sown seedlings of it having been known to spring up in considerable numbers under old plants in sheltered positions. In a shrubbery or wood it makes a brilliant blaze of yellow. It succeeds in almost any soil or situation provided it is not too heavy or wet. Under favourable conditions it reaches a height of 16 feet to 20 feet, with rather straggling branches, every little twig of which is covered with flowers in season. The leaves are about half an inch in length, and covered with white, silky hairs on the under side and a few scattered ones on the upper surface. Easily raised from seed.
Gordonia Lasianthus (Loblolly Bay)	Virginia to Florida; Ternstrœmiaceæ	White; July	A sub-evergreen shrub 6 to 8 feet high, bearing beautiful white flowers like single Camellias. It needs a sheltered spot and a moist peaty soil.
G. pubescens	Georgia and Florida	White	Of rather smaller growth than the preceding, while the leaves are pubescent underneath. The flowers, too, have the tuft of yellow stamens more pronounced than in G. Lasianthus. Both need the same treatment.
Halesias (Silver Bell, or Snowdrop trees)	Styraceæ	.....	This is a beautiful family of flowering trees, named after Dr. Stephen Hales. The flowers are like the snowdrop in shape, hence the name, and there are two distinct sections, American and Asiatic. The Halesias like a rich, moist, loamy or peaty soil. Although often trees of considerable size in their native homes, they mostly retain a somewhat shrubby character in this country. All the species, however, except H. parviflora, can, by pruning away the lower branches, be made to form small trees.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Halesia corymbosa	Japan, in the province of Higo	White, tinted with pink or yellow; Spring	Mr. Bean writes in *The Garden*, May 19, 1900, p. 361, about this species as follows: "I do not know if there is any authenticated instance of its having flourished in Britain or even in Europe, most plants so called being H. hispida. It was first found on the mountains of the most southern of the main islands of Japan, in the province of Higo, and may possibly not be quite so hardy as H. hispida. Judging by pictures and dried specimens, its racemes, whilst having much the same general character as that species, are shorter, broader, and more branched, and the flowers are not so numerous on the branches of the racemes, and the fruits are more downy than bristly. The flowers have the same one-sided arrangement on the racemes.
H. diptera	South-eastern United States	White; late Spring	Not a common species, and dwarfer than H. tetraptera. The flowers are white, Snowdrop-like, and are borne on slender pendulous stalks as in H. tetraptera; they differ, however, in having the corolla almost lobed to the base. Very distinctive is the seed-vessel, which has but two prominent wings, the other two being only rudimentary. Whilst not perhaps equal in merit to H. tetraptera this species appears to have been undeservedly neglected. Its dwarf bushy habit will also render it more suitable for some positions; it loves abundant moisture at the root. It blossoms rather later than H. tetraptera.
H. hispida	China and Japan. Introduced about 1870	White	This belongs to the Asiatic group of Halesias, and is very distinct from the American species. It is a vigorous shrub, a small tree with large oblong leaves, and small flowers, which are very numerous on the raceme, which is 4 inches to 8 inches long. One striking pecu-

GENISTA MONOSPERMA. (*See p. 032.*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Halesias hispida	China and Japan. Introduced about 1870	White	liarity of the raceme is that the flowers are arranged on the upper side only of its branches (a somewhat similar arrangement is seen in Freesia flowers). The seed-vessels are covered with bristly hairs. Mr. Bean says, "Whilst perfectly hardy at Kew in the open, it blossoms more freely on a wall. The finest specimens I have seen of this Halesia are growing near a carriage-road leading to Mr. Gumbleton's house and garden at Belgrove, Queenstown." It flowers in this country in June.
H. parviflora	South-eastern United States. Introduced in 1802	White; end of May	This is invariably a shrub. It is represented in the Kew collection by a large bush, which flowers as a rule with great freedom towards the end of May each year. The arrangement of the flowers is more racemose than fasciculate, and whilst they are very abundant they are not so large as in H. tetraptera or H. diptera. They are white and Snowdrop-like. The seed-vessels are only slightly and unequally winged. On the whole, therefore, the species is easily distinguished from its two fellow American species. The grace and abundance of its bloom make it well worthy of cultivation wherever a variety of hardy shrubs is desired.
*H. tetraptera (Common Snowdrop tree)	South United States. Introduced by a London merchant named Ellis in 1756	White; May	A beautiful tree. Whilst according to Prof. Sargent it occasionally attains a height of 80 to 90 feet in its native country, it is seldom more than 20 feet high in the British Isles. Its flowers are like pure white Snowdrops, hence the popular name. The seed-vessels are 1½ inches to 2 inches long, and have four prominent wings that transverse them lengthwise.
H. t. Meehani	This originated as a seedling in Meehan's Nursery, Germanstown, Philadelphia	White	A very handsome and distinct variety, with shorter flower-stalks, and thicker and more coarsely wrinkled leaves than the type.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Hamamelis (Witch or Wych Hazel) *H. arborea	Hamamelideæ China	Orange-yellow; Winter	A charming tree when in flower. It blooms early in the year, the precise time depending upon the weather. When the leafless shoots are studded with the golden-yellow, narrow-petalled flowers, with their crimson calyces, it is very pretty. It is also worth using with some shrub like Gaultheria procumbens as a groundwork. It enjoys an open situation, and is not very particular about soil.
H. japonica	Japan	Pale yellow; Winter	An interesting shrub, of which *Zuccariniana is a well-known variety.
H. mollis	Japan	Bright yellow	This is a rare Witch-Hazel, with very broad and large leaves, and wavy brightly coloured flowers.
H. virginica	Eastern North America	Pale yellow; Autumn	For many years this species was the only Witch-Hazel in cultivation. Being spread over the eastern side of North America from Canada to the Southern United States, it naturally attracted the notice of the earlier colonists, and it was, in fact, introduced to Britain as long ago as 1736. During the last twenty or thirty years, however, new species have been discovered and brought home from China and Japan. They surpass this old American species in garden value, and are, indeed, amongst the most interesting and attractive of the shrubs that flower in the early part of the year. H. virginica, on the other hand, is at its best in autumn. It has the narrow, twisted, bright yellow petals which, with but little variation, are characteristic of all Hamamelis flowers. The flowers cover the younger branches in close, dense clusters. It is a sturdy shrub, almost a small tree, and has leaves very like those of the English Hazel (Corylus).
*Hibiscus syriacus (Tree Mallow, Syn Althæa frutex)	China; Malvaceæ	White; blotched red	An upright growing deciduous shrub 6 feet high, is particularly valuable from the fact that it flowers towards the later part of August, when

SHOOT OF SNOWDROP TREE (*Halesia tetraptera*). (*See p. 035.*)

HYDRANGEAS.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Hibiscus syriacus (Tree Mallow, Syn Althæa frutex)	China; Malvaceæ	White; blotched red	so few hardy shrubs are in bloom. It needs a well-drained, loamy soil, that is, however, not parched up at any time, and a spot fully exposed to the sun. There are many varieties of this, ranging in colour from white to purple, both single and double flowered forms being represented. Totus albus, white, is the best.
*Hippophæ rhamnoides (Sea Buckthorn)	A British shrub, chiefly in the south and south-east coasts; Eleagnaceæ	Flowers inconspicuous; yellowish	A beautiful somewhat spiny tree, or rather shrub, to plant by the side of a lake, pond, stream, moat, or anywhere a free spreading shrubby growth is desired. But it will succeed as well inland as by water. A splendid group may be seen near the pond at Kew, and for many years has made a beautiful winter picture in the gardens. Every winter the wood made the previous year is thickly cased with the bright orange-coloured berries, which remain on the branches all the winter, but later on, if hard frosts are experienced, they lose most of their brightness. It must not be forgotten that the flowers are unisexual, *i.e.* those of one sex only are borne on a tree. Male trees therefore do not produce berries, and to get fruit a female and male must be near. In each group, say of about half-a-dozen plants, one plant should be male and the rest female. This is of the utmost importance, and see to it before the plants leave the nursery. The Sea Buckthorn is a large shrub or small tree. A very pretty standard tree results from keeping it to a single stem and removing the lower branches. The leaves are very charming in colour, a silvery grey. The male plant is of more upright growth than the female.
*Hydrangea Hortensia (the Hydrangea, Syn H. hortensis)	China and Japan; Saxifrageæ	Deep pink; Summer and Autumn	Better known throughout the greater part of England as a greenhouse plant than as an outdoor shrub, but in the extreme south and west

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Hydrangea Hortensia (the Hydrangea, Syn H. hortensis)	China and Japan; Saxifrageæ	Deep red; Summer and Autumn	it is very handsome in the open ground. The huge heads of flowers make a great display. There are several varieties, some of them being often regarded as distinct species, the most notable of which are: Lindleyi, with the large sterile flowers limited to a few around the outside of the cluster. They are pink, tinged with blue. Mariesii is a very handsome Japanese variety, with large sterile flowers, pinkish mauve. Nigra or cyanoclada has purplish black stems, and is very notable on that account. Rosea has all the flowers sterile, and of rich rose colour. Stellata has the sterile flowers double and star-like. Thomas Hogg has white blossoms.
*H. paniculata	Japan	Creamy white; Autumn	A handsome shrub that may be grown as a dwarf bush or as a standard. The variety grandiflora is far more popular than the type, and is grown largely for flowering under glass as well as in the open ground. In this the huge pyramidal-shaped heads are composed entirely of sterile blossoms. If to be kept dwarf it must be pruned back hard when dormant, and only three or four shoots allowed to develop.
H. petiolaris (Climbing Hydrangea, Syn Schizophragma hydrangeoides)	Japan	Creamy white; June and July	A free-growing climber, that attaches itself to a wall by means of aerial roots after the manner of ivy. It has flattened clusters of flowers. Being so distinct from all the rest, it at once attracts attention.
H. quercifolia	North America	White	A shrub about a yard high, with large lobed leaves. The flowers are less showy than some of the others. It needs a moist soil and a very sheltered spot.
H. radiata	North America	White	The flowers of this are not at all showy, but the leaves are clothed on the under sides with a dense white felt-like substance, which renders it very noticeable when ruffled by the wind.

HYDRANGEA PETIOLARIS. A GROUP IN WOODLAND.

KALMIA LATIFOLIA. A GOOD SHRUB FOR PEATY SOILS. (See p. 040.)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Hypericum Androsæmum (Tutsan, Syn Androsæmum officinale)	Europe; Hypericineæ	Yellow	A free-growing deciduous shrub from 2 to 3 feet high, with a mass of small flowers, but not very showy. It will grow in the shade better than many other shrubs.
H. aureum	North America	Yellow; July and August	Reaches a height of about 4 feet. The orange-yellow flowers, about 1½ inches across, have a large and conspicuous mass of yellow stamens in the centre.
*H. calycinum (Rose of Sharon, St. John's Wort)	Levant	Yellow; July to Autumn	Forms a dense mass a foot high, while the golden-yellow flowers are quite 3 inches across. The long hair-like stamens are very numerous and attractive. It will both grow and flower well in shady spots.
H. elatum (Tall St. John's Wort)	North America	Yellow	Grows 4 to 5 feet high, and is very robust. The flowers, however, though freely borne, are only about an inch in diameter.
H. hircinum	Europe	Yellow; Autumn	When roughly handled the leaves of this species have an unpleasant goat-like odour, but it is decidedly ornamental, forming as it does a bush a yard high, while the flowers are bright yellow.
*H. hookerianum (Syn H. oblongifolium)	Himalayas	Yellow; Autumn	Rather more tender than some of the Hypericums, but a showy kind. It grows over 4 feet high, and has clusters of large golden flowers.
*H. moserianum	Garden hybrid	Yellow; early Autumn	A hybrid between H. calycinum and H. patulum, and one of the most desirable of all the St. John's Worts. The slender branches are graceful, and terminated by clusters of rich golden-yellow flowers a couple of inches across.
H. patulum	Japan	Yellow	A delightful little shrub, but even in the south of England it is liable to be killed by a severe winter.
H. prolificum	North America	Yellow	Grows 3 feet high, and bears its clusters of blossoms very freely. The individual flowers are about an inch across.
H. uralum (Syn H. nepalense)	Himalayas	Yellow	Somewhat in the way of H. patulum, and like that species rather tender.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Itea virginica	Virginia; Saxifrageæ	White; July	A freely branched rounded shrub, from 3 to 4 feet in height, and has small spikes arranged in much the same way as the shrubby Veronicas. It is a favourite of the Red Admiral butterfly (Vanessa Atalanta). It is quite hardy, but needs a moist peaty soil.
Jamesia americana	Rocky Mountains; Saxifrageæ	White; April and May	A somewhat upright shrub, 4 to 5 feet high, with oval-shaped leaves and a great profusion of terminal clusters of pure white blossoms. It is quite hardy and needs a cool moist soil.
Kalmia angustifolia (Sheep Laurel)	North America; Ericaceæ	Bright purplish red; end of May	A delightful little evergreen shrub about a couple of feet high, with bright-coloured, saucer-shaped blossoms. All the Kalmias prefer cool damp soil, especially of a peaty nature — indeed, conditions favourable to Rhododendrons suit them well.
K. glauca	North America	Purplish pink	Flowers two or three weeks earlier than the preceding, and is somewhat dwarfer, but is equally desirable.
*K. latifolia (Mountain Laurel)	North America	Pink; May, through Summer	This forms a large rounded bush from 6 to 8 feet high, clothed with handsome, bright-green foliage, while the flowers are pink and wax-like. It is a desirable subject to associate with Rhododendrons, which, except in flowers, it much resembles.
*Kœlreuteria paniculata	China; Sapindaceæ	Yellow; June and July	A small picturesque tree 10 to 15 feet in height, with ornamental pinnate leaves, and large terminal panicles of bright yellow flowers, very distinct.
Laburnum (Cytisus) vulgare (Golden Rain or Chain)	Loudon writes: "A native of Europe and the lower mountains of the South of Germany, and of Switzerland, where it grows to the height of 20 feet or upwards. It was introduced in 1596"; Leguminosæ	.....	There is no need to praise the laburnum; it is one of the most beautiful of all trees, and its countless flowers make a shower of gold in early summer. It seems strange to read that the laburnum is not a native, for it is so general in gardens, and is even used in hedgerows in some parts of the country. We have in mind a hedgerow in Berkshire with laburnums rising above the thorn, and a pleasant sight this is in late May and early June.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Laburnum (Cytisus) vulgare (Golden Rain or Chain)	.....	.....	Laburnums grow so freely almost everywhere that they are somewhat overdone in gardens, but it is so beautiful a tree that many would say: "I don't mind how many laburnums I have in the garden." Mr. Goldring, writing in the "Gardeners' Magazine" about laburnums, says:— "Besides the common way of growing the laburnum as a shrubbery or plantation tree, it may be put to various other uses. It is a beautiful covering for a wall on the north, east, or west sides. In some old gardens one meets with huge trees of it covering large areas of wall, and affording a lovely sight at flower time. This is a common way of growing it on the Continent, and in some of our old botanic gardens it may be seen trained against a wall as a host for the wistaria, which flowers about the same time, and produces a lovely contrast of colour. "I have pleasing recollections of seeing it in some old gardens trained over a path as a covered way before pergolas were in vogue in this country. For several weeks such covered pathways are glowing with colour, and for the rest of the summer they afford a pleasant shade. In some of the old Sussex gardens laburnum 'tunnels' are still to be seen, and they are worth imitating in new gardens. "Of the two commonly grown species of laburnum, L. vulgare and L. alpinum, there are numerous varieties, differing more or less from the types, though the differences in some cases are slight, even from a garden point of view. A laburnum is a laburnum to most people, and nothing more, but there is a great difference between a worthless seedling with short flower clusters of a poor yellow, and the varieties such

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Laburnum (Cytisus) vulgare (Golden Rain or Chain)	.....	.....	as Watereri and Parksii which bear racemes fully 16 inches in length, and of a rich-toned yellow. There is, unhappily, in gardens, a preponderance of inferior seedling trees, because they can be raised easily and sold cheaply, but it is better to have one grafted tree of a first-rate variety than a dozen inferior kinds. "The number of named varieties of L. vulgare enumerated in Continental and English nursery lists exceed a score, and most of them are mere monstrosities of leaf-form or colour, only appreciated by the collector of curiosities. The finest varieties are those named Alchingerii, giganteum, Carlieri, and grandiflorum. Any of these, if true to name, are the kinds to plant. They all bear very long racemes, produced abundantly."
*L. alpinum (Cytisus alpinus), Scotch laburnum	Called the Scotch laburnum because a supposed native of Scotland, but this is not true. Loudon says: "It was introduced into Britain about the same time as the other species, 1596." The other species is Laburnum vulgare.	Yellow	This is a well-known tree. Some of its varieties are very beautiful, especially Watereri, which has very long racemes, and when in full beauty is a lovely picture. This should be made note of as one of the most charming of all early summer flowering trees. Parksii is another beautiful variety, whilst there are also autumnalis (flowers in autumn, hence the name), biferum, grandiflorum, and hirsutum.
L. Watereri	Hybrid	Yellow	We have given this special prominence for the reason it is a hybrid. In Bailey's "American Cyclopædia" occurs this note: "Watereri, Dipp. (L. Parksii, Hort, C. alpinus and vulgaris Wittst.) Hybrid of garden origin, but found also wild. . . . As hardy as L. alpinum and sometimes considered to be a variety of that species."
L. Adami (Purple laburnum)	Graft-hybrid	Purple, yellow, and buff	This is a remarkable tree, and is named after M. Adam, who grafted Cytisus purpureus on the common laburnum. Loudon says the purple laburnum "is a hybrid between Cytisus laburnum and C. pur-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Laburnum (Cytisus) vulgare (Golden Rain or Chain)	.....	.....	pureus, in which the flowers are of a reddish purple, slightly tinged with buff, and are produced in pendent spikes eight inches or more long. It was originated in Paris, in the nursery of M. Adam in 1828; it was introduced into England about 1829, and has been a good deal cultivated." We noticed a tree of it in a hedgerow near Burnham Common, Slough. It is a strange tree. Some branches will perhaps bear entirely yellow flowers, like those of the common laburnum and others like Cytisus purpureus, varied by a flower that shows the characters of both parents. It is more curious than beautiful.
*Ledum latifolium (Labrador Tea)	Northern portion of North America; Ericaceæ	White; late April	A much-branched shrub 2 to 3 feet high, and when in bloom covered with its rounded clusters of white blossoms. It needs a cool moist peaty soil, and given this it is very attractive when in bloom.
L. palustre (Marsh Ledum)	Northern part of Eastern Hemisphere	White, tinged pink	Much like the last, except that it is rather smaller, and the blossoms tinged with pink.
Leiophyllum buxifolium (Sand Myrtle), (Syn L. thymifolium)	New Jersey and Virginia; Ericaceæ	White; May	A compact little evergreen shrub about a foot high. Every twig, however small, bears a cluster of pretty blossoms, in colour white tinged with pink. It is a good rockwork shrub in a cool moist position.
Lespedeza bicolor	Japan; Leguminosæ	Rosy red; July	Sends up stiff annual shoots to a height of 4 feet. The leaves are trifoliate. It needs a warm soil, and is not particularly attractive.
*L. Sieboldi (Syn Desmodium penduliflorum)	China and Japan	Reddish purple; September	A deciduous sub-shrub that dies nearly to the ground in the winter. From the base are pushed up long wand-like arching shoots to a height of 6 feet, clothed with trifoliate leaves, and bearing large terminal panicles of pea-shaped blossoms. Should it escape the autumn frosts it is delightful.
Leycesteria formosa	Caprifoliaceæ; Temperate Himalaya	Purplish white, and purple bracts	A very interesting shrub, 6 feet high in the milder parts of these isles, but hardy almost everywhere, These flowers are succeeded by purple berries which are relished by pheasants, hence it is planted for covert in some places,

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Ligustrum coriaceum (Thick-leaved Privet)	China; Oleaceæ	White	A sturdy evergreen shrub, with very dark-green leaves, thick, about 1½ inches long and roundish oval in shape. It reaches a height of about a yard, and is of extremely slow growth.
L. Ibota (Syn L. amurense)	Japan	White; June and July	A graceful shrub with long, slender, arching branches, narrow leaves, and white flowers.
L. japonicum (Japanese Privet)	Japan	White; early July	Reaches a height of 6 to 8 feet, and forms a freely branched bush clothed with bright shining green leaves from 2 to 3 inches, oval pointed in shape.
*L. lucidum (Wax Tree)	China	White; July and August	This is the most ornamental of all the Privets in foliage, the leathery dark-green leaves being sometimes as much as 6 inches long, and over two inches wide. It reaches a height of 9 to 12 feet, and has large panicles of white flowers. There is a variety —tricolor, with leaves beautifully variegated, but being tender it needs wall protection.
L. massalongianum (Syn L. rosmarinifolium)	Khasia Hills	White	The long narrow leaves of this species make it distinct from all other Privets. It is hardy only in the west of England and Ireland.
*L. ovalifolium (Oval-leaved Privet)	Japan	White	This sub-evergreen species is one of the hardiest of all Privets, being much used for hedges, and for planting where little else will thrive. Its small dense clusters of flowers are borne in great profusion, but they (in common with most Privets) possess such a heavy and unpleasant odour as to unfit them for planting near dwelling-houses. The golden form of this Privet, known as Aureum or Elegantissimum, is met with nearly everywhere, particularly in the environs of London.
*L. Quihoui	China	White; late September	A somewhat spreading shrub about 5 feet high, with small leaves and terminal panicles of flowers. For this reason it is worth growing as a flowering shrub.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Ligustrum sinense (Chinese Privet)	China	White	The finest of all Privets as regards its flowers. It forms a sub-evergreen shrub from 12 to 15 feet high, with arching branches, and frond-like arrangements of the smaller branchlets, which are clothed with leaves about the size of those of the Common Privet, and pale green in colour. The white flowers are borne in such profusion towards the end of July that the entire plant is quite a mass of that colour. It needs a well-drained soil.
L. vulgare (Common Privet)	Europe	White	As a hedge plant this is to a great extent superseded by L. ovalifolium, but it is still a useful shrub for rough places. It is one of the subjects that can be clipped into all manner of shapes, hence it is very popular for topiary work.
*Liriodendron tulipifera (Tulip tree)	United States; Magnoliaceæ	Yellow; June	The Tulip tree is one of the most beautiful and distinct of all our hardy trees, for the peculiarly shaped four-lobed leaves cannot be confounded with those of any other. It occurs over a considerable extent of country in North America, and when suitably situated attains a height of 130 to 140 feet. Though these dimensions are not reached in this country, specimens nearly 100 feet high are known, and its great value as a timber tree has been demonstrated here as well as in the United States, where it is given the name of the White Wood. The yellow Tulip-like flowers, from whence its popular name in this country is derived, are very pretty, but as a rule borne at such a height that their beauty cannot be seen. They, however, add to the interest and charm of the tree, and with the handsome leafage and the rich yellow hue of the foliage in the Autumn, as well as its thorough hardiness and almost complete indifference to soil and situation, make it one of the most desirable of our large grow-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Liriodendron tulipifera (Tulip tree)	United States; Magnoliaceæ	Yellow; June	ing trees. There are several varieties, notable among them being integrifolia, in which the distinctive lobes of the leaves are suppressed; aurea maculata, whose leaves are blotched with yellow; and fastigiata, which is of upright growth. These are all interesting, but not equal in beauty to the type.
Loropetalum chinense	China; Hamamelideæ	Pure white; Winter	A very interesting shrub, with long petals, resembling one of the flowers of Hamamelis; they appear 6 to 8 together in clusters at the bract tips.
Magnolia acuminata (Cucumber tree)	North America; Magnoliaceæ	Greenish yellow	From a flowering point of view this is one of the least showy of the Magnolias, but the tree has handsome foliage; it reaches a height of many feet. The leaves are nearly a foot long, and half as much in width. There is a tree 60 feet high in Syon Park, Middlesex.
*M. conspicua (the Yulan)	China	Pure white; early Spring	Of all the Magnolias, and indeed of all our deciduous trees, this is one of the finest, and also one of the earliest flowering. It blooms in some seasons as early as March, and the pure white flowers, like silver chalices, stand out boldly from the bare dark-coloured branches. Owing to the flowers expanding so early, they are sometimes injured by spring frosts, hence in the northern parts of the country this species is often given wall protection. This Magnolia succeeds best in a good, well-drained, loamy soil of not too heavy a nature, indeed, such will suit all the Magnolias perfectly.
M. Fraseri (Fraser's Magnolia), (Syn auriculata)	North America	Creamy white; May	A distinguishing feature of this Magnolia is the shape of the large leaves, which are broader towards the upper portion than at the base. It reaches a height of 30 feet or more, but needs a spot sheltered from strong winds. The sweet-scented flowers are nearly 6 inches across.

FLOWER OF YULAN (Magnolia conspicua). ABOUT HALF NATURAL SIZE.

YULAN (*Magnolia conspicua*); *ITS USE AS A WALL SHRUB, CROWSLEY PARK, HENLEY.*

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Magnolia glauca (the Swamp Magnolia)	North America	White	A shrub from 10 to 12 feet high, with flowers not borne all at once, as in most of the others, but scattered over two or three months, from June onwards. It makes a pretty lawn shrub for a damp spot.
*M. grandiflora (the Evergreen Magnolia)	Southern United States	White; late Summer	The evergreen Magnolia is more generally grown as a wall plant than in the open ground, though in the south and west of England it will thrive perfectly without protection. As a wall covering the handsome dark-green leaves render it effective at all seasons, and they also serve as an admirable setting for the large cup-shaped deliciously-scented flowers.
M. hypoleuca	Japan	Creamy white	In Japan this is a tree 60 feet high, and is said to be a very desirable kind, but it has not been long introduced, and the plants of it in this country are small.
*M. Lennei	Garden origin	Glowing purple outside pinkish within; late Spring	The flowers of this are large, massive in texture, and delightfully coloured. They are a month or two later than those of the Yulan, hence they escape the frosts which sometimes injure it.
M. obovata (Syn M. purpurea)	Japan	Purple outside, whitish within; late Spring	A spreading shrub 6 to 8 feet high, with flowers much smaller than those of M. Lennei, and not of so pleasing a colour. It is, however, a handsome shrub, less particular in its requirements than most Magnolias.
M. parviflora	Japan	White; May and June	A neat bush. The centre of the flower is occupied by a ring of bright-red filaments. It is rather tender,
*M. soulangeana	Garden origin	White, tinged purple outside; Spring	A small tree more spreading in character than M. conspicua, and flowering also a little later. Very pretty, early flowering.
*M. stellata (Syn M. halleana)	Japan	Pure white; March	The earliest of all the Magnolias. It is a much branched shrub, seldom more than 4 feet high, and as much through. The flowers, which are borne in great profusion, are about 3 inches in diameter, and composed of a dozen or so of strap shaped petals; a lovely shrub.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Magnolia tripetala (Umbrella tree), (Syn M. Umbrella)	North America	Creamy white; early Summer	A tree remarkable for its large handsome leaves, which are arranged in a regular manner towards the upper parts of the branches. The flowers are creamy white. A sheltered spot suits this best.
M. Watsoni	Japan	Ivory white inside, flushed with rose on the exterior; May and June	A bush about 5 feet high. The flowers are remarkable for their central cluster of crimson filaments. It needs a sheltered spot.
Notospartium Carmichæliæ	New Zealand; Leguminosæ	Rose; June	This grows in New Zealand several feet high, but not here. It has graceful shoots, which are very pretty when smothered with the pink pea-shaped flowers. A correspondent to the *Garden*, writing in July 1900 from Castle Douglas, N.B., says: "I am sure if my plant of Notospartium Carmichæliæ were to be seen by anyone who has not got it, there would be countless inquiries for it. It has always done well and flowered freely, but this year it is simply magnificent, with only the points of the twigs visible above the mass of bright pink blossoms."
Nuttallia cerasiformis	California; Rosaceæ	White; early Spring	This is one of the prettiest and most interesting of March shrubs. It is of good habit, and produces a large quantity of dull white flowers in drooping racemes. The fruits, too, are pretty, not unlike those of a small plum, of reddish-yellow colour, with a plum-like bloom. It must be noted that the flowers are liable to be dicœcious, and so, therefore the sexes must be planted together, though we have obtained fruit by sticking branches of the male flowers among those of the female shrub.
*Olearia Haastii (Daisy Bush)	New Zealand; Compositæ	White; July and August	A valuable evergreen Box-like shrub, laden with small white Daisy-like blossoms with a yellow disc. Though a native of New Zealand, it is hardy in most parts of England.

MAGNOLIA CONSPICUA var. SOULANGEANA (*late Spring*). (*See p. 046.*)

OLEARIA MACRODONTA. (*Redruth.*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
O. macrodonta (New Zealand Daisy tree), (Syn O. dentata)	New Zealand	White; July	This has large Holly-like leaves, silvery on the undersides, and heads of Daisy-like blossoms. Far more tender than O. Haastii, this needs a wall in most parts of the south of England, though it is hardy in the extreme west and in the south of Ireland.
O. stellulata (Syn. O. gunniana, Eurybia gunniana)	New Zealand	White, yellow disc; May and June	An evergreen bush, with small narrow leaves, the undersides covered with whitish felt. The Daisy-like flowers appear in profusion. Its requirements are the same as the last.
O. Traversii (Syn Eurybia Traversii)	New Zealand	White; June	In its native country this is a timber tree, but here it needs the same treatment as the last two. The flowers are small and creamy white.
Oxydendron arborea	Eastern United States; Ericaceæ	Pure white; June and July	This is a charming shrub, but in its native country grows to a height of 40 feet. The leaves are dark green, but very richly coloured in autumn. The bell-shaped white flowers remind one of those of the Lily of the Valley, and appear in pretty racemes.
Ozothamnus rosmarinifolius	South Australia and Tasmania; Compositæ	White; July	A neat shrub, 4 to 5 feet high, with narrow rosemary-like leaves, and during the summer a profusion of white Aster-like blossoms. It is hardy only in the West of England.
*Pernettya mucronata	Cape Horn, introduced in 1828; Ericaceæ	Berries the chief beauty	Many garden varieties. Between 1878 and 1882 the floral committee of the Royal Horticultural Society awarded no less than seven first-class certificates, selecting the following varieties for the purpose: P. alba, carnea nana, lilacina macrocarpa, nigra major, rosea purpurea, and sanguinea. There are ten or a dozen quite distinct shades of colouring, from white through tenderest pink, white and rosy pink, the colours then reaching to a soft scarlet, and ending with a dark blood-red, reminding one of the seeds of the Pomegranate, and also the differences in the size of the berries and foliage, particulars which impart additional interest to this useful

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Pernettya mucronata	Cape Horn. Introduced in 1828; Ericaceæ	Berries the chief beauty	group of plants. Some fifty or so years ago Mr. Davis of Hillsborough began his experiments with such forms of the Pernettya as were then in cultivation, and he selected as his first seed-parent P. angustifolia, a native of China, a densely branched, narrow-leaved evergreen shrub, growing to a height of about 3 feet. The fruit of this species is light pink in colour. It is a very effective subject, thriving well under the shade of trees, but in such a position does not, as might be expected, flower so freely as when grown in the open. P. mucronata, the type, bears reddish-tinted fruits. Regarding P. angustifolia as the hardiest of the two, Mr. Davis made this the first seed-bearing parent, and found the seedlings from it to vary considerably in the character of the foliage and colour of the fruit. This encouraged him to take seed from the best of his seedlings, and from it obtained the fine varieties which are now in our gardens. It is difficult to over-estimate their value as berry-bearing plants in autumn in peaty soil.
Philadelphus coronarius (Mock Orange or Syringa)	Europe and Asia; Saxifrageæ	White; early May	A well-known shrub, from 6 to 10 feet high, with a profusion of white, strongly scented flowers. There are several varieties, the best being aurea, with golden leaves, and Keteleerii, with double blossoms.
P. gordonianus	North America	White; early July	A free-growing bush with flowers twice the size of the preceding, and about six weeks later in expanding.
*P. grandiflorus (Large-flowered Mock Orange, Syn P. inodorus)	Southern United States	White; Midsummer	Forms a bush about 12 feet high, with large leaves and blossoms. It lacks the fragrance of the other species, which is to many people a point in its favour.
P. hirsutus (Hairy-leaved Mock Orange)	North America	White	Grows obout 5 feet high, and bears its comparatively small flowers in great profusion.
*P. Lemoinei (Lemoine's Hybrid Mock Orange)	Garden Hybrid	White; June and July	A hybrid between P. coronarius and the little New Mexican P. microphyllus. It (P.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Philadelphus Lemoinei (Lemoine's Hybrid Mock Orange)	Garden Hybrid	White; June and July	Lemoinei) forms a slender, freely-branched shrub about 5 feet high, and has a profusion of small pure-white flowers that are most agreeably scented, the fragrance reminding one of ripe apples. The variety erectus is a rather stronger grower, and even a finer plant. Other delightful hybrid forms are, Boule d'Argent, a neat bush with double flowers; Candelabre, with larger blossoms than the other forms of Lemoinei; Gerbe de neige, dwarf form with large single flowers; and Manteau d'Hermine, semi-double. These are among the most charming of all hardy shrubs.
*P. Lewisii	Western North America	White; Mid-June	One of the best, with long graceful arching shoots, and large trusses of pure white blossoms.
*P. microphyllus (Small-leaved Mock Orange)	New Mexico	White	A dense rounded bush, 3 feet high and as much across, clothed with tiny leaves, and very fragrant flowers one inch across.
Philadelphus Satsumi (Japanese Mock Orange)	Japan	White	Rather tenderer than the American kinds this forms a distinct spreading bush thinner than most of the others. The flowers are pure white and fragrant, and differ from the others in that the petals are less rounded and full, thus forming a more starry bloom.
*Pieris floribunda (Syn Andromeda floribunda)	North America; Ericaceæ	White; April to May	A rounded evergreen shrub, from 3 to 5 feet high, clothed with very dark green leaves, and with spikes of pure white Lily-of-the-Valley-like blossoms. It needs a fairly sheltered position and a cool moist soil, such as Rhododendrons delight in.
*P. formosa	Himalayas	White; May and June	A large bold-growing shrub, with handsome dark-green leathery foliage. It has spikes of wax-like urn-shaped blossoms. It is too tender for general cultivation, except in the West of England and in Ireland.
*P. japonica (Syn Andromeda japonica)	Japan	White	This differs from the last in the white wax-like flowers being borne on long pendulous racemes, so that at their best the entire plant is quite veiled

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Pieris japonica (Syn Andromeda japonica)	Japan	White	with them. The tips of the growing shoots too are bright red. This blooms naturally earlier than P. floribunda, and on that account the flowers are often injured by spring frosts, to prevent which, as far as possible, it should be planted in a sheltered spot, where the early morning sun does not shine direct on it.
P. mariana (Syn Andromeda mariana)	North America	White; Summer	A deciduous shrub a yard high, with wax-like flowers. A damp peaty soil suits it best.
P. ovalifolia	Nepaul	White; May	Grows to a height of 10 to 12 feet, and has spikes of white flowers. This species succeeds better in the West of England and in Ireland than elsewhere.
Prunus (Rosaceæ)	...	...	This is a beautiful genus. As at present constituted it contains all those trees which were formerly and in many places still are included under the generic titles of Amygdalus, Persica, Cerasus, Padus, &c. The genus is divided into six sections, viz., Amygdalus, which includes Almonds and Peaches; Armenaica, the Apricots; Prunus, which contains the true Plums and the Blackthorn; Cerasus, the various Cherries; Padus, the Bird Cherries; and Laurocerasus, under which is placed the Cherry Laurel, Portugal Laurel, &c. Although these genera may differ outwardly, yet they are botanically of the same character. The genus is widely spread, representatives being found in Europe and through Asia southward to Persia and Afghanistan, and eastward to China and Japan; it is also well represented in North America. With the exception of the section Laurocerasus, all the members of the genus are deciduous trees or shrubs of various sizes, and most of them are very beautiful, especially in spring. A fairly light well-drained soil is best. If inclined to be cold and heavy and is not very deep, the plums or any which suc-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Prunus	. ....	.....	ceed on the plum stock, are best, as they are more surface-rooting than the remainder. The presence of lime in the soil is highly beneficial to all the Prunuses and, if not naturally present, can easily be given in the form of old mortar-rubbish forked in liberally round them. Propagation is effected by seeds, cuttings, layers, or by budding or grafting. Details of propagation will be found with each section.
P. Amygdalus (the Almond)	Native of Southern Europe and the Levant	Pink; Spring	This is the Almond, the tree which foreshadows the coming of spring, its leafless shoots enveloped in pink-tinted flowers. In the southern and central parts of the country it is largely grown, especially in small suburban gardens, but is not quite hardy enough for the north, unless the position is very favourable. The fruit is chiefly composed of the large deeply-pitted stone, which is only covered with a thick, tough, woolly skin. There are five good varieties: Amara, the Bitter Almond, with large white flowers tinged with a soft rose colour in the centre; dulcis, the Sweet Almond, with large red flowers and amongst the first to open; macrocarpa, which has larger flowers and fruits than the type, but the flowers are of paler colour; pendula, a half-weeping variety, deep pink flowers; persicoides, a handsome tree, more upright in growth than the type, and very free. The large pink flowers open somewhat earlier than those of the common Almond.
*P. davidiana (Amygdalus davidiana)	China	White or pale rose; January or early February	This is a small tree and one of the earliest to bloom; the flowers opening as early as January in mild weather, though the middle or end of February is its usual flowering time. The buds are not injured by frost, but open when the weather gets milder. The leaves are broader and of duller colour than those of

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Prunus davidiana (Amygdalus davidiana)	China	White or pale rose; January or early February	the Almond, but the flowers are of about the same size and substance. There are two forms, alba, white, and rubra, rose or red. Beautiful under glass.
P. incana (Amygdalus incana)	Asia Minor	Pale red; March and April	This species is allied to the pretty P. nana; it is a spreading shrub 4 to 6 feet high with linear leaves silvery-white underneath. The flowers are about half the size of those of the Almond and freely produced.
*P. nana (Amygdalus nana)	Eastern Europe and the southern parts of Russia	Rose; March and April	This delightful little shrub is rarely more than 3 feet high, the thin twiggy growths being covered every Spring with rose-coloured flowers. It makes a charming bed for the Spring, and is very easily increased by layering.
P. orientalis	Western Asia	Rose; April	This shrub grows to a height of about 6 feet, but is not very hardy. So many, however, enjoy the beauty of the Almond family that we include it, as in many southern gardens it is happy. The willow-like leaves are silvery white.
*P. Persica (the Peach), (Syn Persica vulgaris and Amygdalus Persica)	China, but formerly considered a native of Persia	Pink; April or May	This beautiful spring-flowering tree needs no description. It is not grown, however, so much as the various double-flowered varieties, such as flore-roseo-pleno and flore-albo-pleno; the former has very double bright rose flowers and the latter white. Flore-rubro-pleno is a double red form. The variety foliis rubris has deep purple-coloured leaves; the flowers are tinged with the same colour and the fruits are dark and freely produced. Magnifica is a double red-flowered variety with larger and finer flowers than the others, and the finest of all. All the Almonds are best propagated by budding or grafting on suitable stocks, which are the common Almond for warm light soils, and the Plum for heavier soils and colder localities. For budding the mussel plum stock is the best to use, and either the same or the Myrobella plum for

A GROUP OF PRUNUS PERSICA. (*Kew.*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Prunus Persica (the Peach)	.....	.....	grafting. The latter is not usually a good stock for budding, the bark being too thin to hold the bud properly, which objection does not hold good with the mussel plum stock. The species can also be got from seeds and P. nana is best raised as stated from layers, or cuttings of half-ripened wood, which will strike, though not very readily.
P. Armenaica (the Apricots)	.....	.....	Many of the species in this group are amongst the most precious flowering shrubs of the garden. All can be increased by seed. P. tomentosa and P. triloba flore-pleno can also be got from layers or cuttings. Half-ripened wood of the latter will also root readily, and soon form sturdy young trees. These two in particular should always be on their own roots: a plum stock kills them in a few years.
P. Armenaica (common Apricot)	Northern China	Small, white, opening early in the year, and frequently blackened by frost	We mention this because it is the parent of the various varieties of Apricot.
*P. Mume	Japan	Rose; early, before the leaves	This is a small and pretty tree of upright growth, and the leaves large and shining green in colour. There are four varieties, viz., flore-albo-pleno, double white; flore-roseo-pleno, double bright rose; flore-rubro-pleno, double red; and pendula, which makes a pretty, small, weeping tree if worked standard high.
P. tomentosa	China and Japan	pinkish	This is a pretty, small branching shrub, with stout leaves covered with a thick tomentum; the flowers are followed by small red fruits.
*P. triloba	China	Pink; March or early April	The species is not of much account, but the double variety flore-pleno is one of the most handsome of flowering shrubs. Its large, double, rose-coloured flowers are produced so profusely that hardly a leaf is visible.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Prunus triloba	China	Pink; March and early April	For a wall it is invaluable, but in this position it should only be pruned immediately after flowering, the summer growths being allowed to develop at will, as this is the wood that will produce flowers the following season.
Prunus (the Plums)	.....	.....	There are several species of Prunus, but those mentioned are the most important for gardens. The Plums are best grown from seeds, but if these cannot be got then they must be worked upon the Wild, Mussel, and Myrobella or Myrobalan Plum. Plum stocks should be raised from seed. If got from layers or suckers they are liable to throw up suckers from the base, and ruin the plants worked on them.
P. cerasifera (P. mirobalana)	Uncertain, but probably of Caucasian origin	Small, pure white; Spring	This is the well-known Myrobalan Plum, and the seedlings are used as stocks. Its hardiness and vigour in almost all soils and climates make it a good small shrub, and its white flower-clusters are delightful in early spring. The fruits are popular on the Continent, and are red in colour. It is used as a hedge in some places. There are two varieties, viz., angustifolia pendula, which is half pendulous in growth, and the well-known atropurpurea, more often called *P. Pissardi, which is a native of Persia, and has warm purple leaves, which get darker with age. The flowers are rose-tinted. It is a good shrub for colour, but must not be too freely planted.
P. communis (Wild Plum)	The origin of this plum is uncertain; it is stated in some works to be a native of Britain, Europe, and a part of Asia	White; April and March	The wild plum is mentioned because a well-known tree, but its varieties are more beautiful. *Pruneauliana is very handsome; its fruit is the prune imported from abroad. It is of upright growth, with downy leaves, and large, pure white flowers. *P. fl. pl. is extremely handsome; it has double flowers. The wild plum is the same as P. domestica.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Prunus divaricata	Wide distribution from Macedonia to Caucasus and Persia. Introduced in 1822	White; April or late March in a mild season	This is one of the most beautiful of the Plums, but rarely seen. A fine example of it is now in the rock garden at Kew, and when the weather is mild before March is out, this spreading tree is enveloped in snowy-white flowers. But unfortunately its flowers are sometimes spoilt by late frosts. The growth is slender, twiggy, and dark in colour.
P. spinosa (the Sloe)	Britain, and Europe, North Asia, &c.	White	The Sloe or Blackthorn of the English hedgerow is familiar, but the variety *flore-pleno is a good garden shrub; its spreading Spring shoots are covered in April with double white flowers, each like a little rosette, and longer lasting than the Sloe of the English lane. It is as yet rare in British gardens. This should be worked on the type.
P. Cerasus (the Cherries)	.....	.....	A beautiful group of flowering trees. They are propagated by seeds or by grafting them on stocks of the Gean (P. Avium), but never resort to this practice if possible to avoid it. The small-growing cherries, P. humilis, P. Jacquemontii, P. japonica, P. prostrata, and P. pumila, must be increased by layers; the Gean stock kills them.
P. acida	Europe	White; April	P. acida would be little heard of if it were not for its variety, P. a. semperflorens, (the All Saints' Cherry), which blooms twice or thrice in a season, indeed, keeps up a scattered succession from May to September. The first display of flowers takes place in April, and in about two months afterwards it blooms again. The fruits are very abundant, and are scarlet in colour. There are several other varieties, but not of much consequence.
P. Avium (the Gean or Wild Cherry)	Europe, and a woodland tree in many parts of these Isles	Pure white; April and May	The Wild Cherry is pretty, and it is interesting as the parent of the fruiting cherries, but neither this species nor its varieties, decumana, white, the cut-leaved laciniata, or the weeping pendula, can approach the beauty of the

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Prunus Avium (the Gean or Wild Cherry)	.....	Pure white; April and May	*double white (flore-pleno), which is one of the loveliest of all flowering trees. In late April the whole tree seems enveloped in blossom as white as driven snow, and it lasts for many days in this condition. No garden should be without this queen of flowering trees.
P. Cerasus (Dwarf or Wild Cherry)	Europe and Britain	White; Spring	This is not very interesting, except that it is one of the parents of the fruiting cherry, and in the garden is hardly wanted, as its double-flowered varieties are far more beautiful, especially *Rhexi flore-pleno, which has very double, snow-white, rosette-shaped flowers. It is one of the most beautiful of all the Cherries, and when grown as a standard makes a small and spreading tree of much charm. It is sometimes catalogued as C. caproniana multiplex, C. c. ranunculiflora, and C. serotina flore-pleno. Persicifolia has similar flowers, but tinged with rose. C. Cerasus and C. Avium have much in common, but the former has smaller leaves and an acid fruit.
P. Chamæcerasus (Siberian Cherry)	Europe, but long grown in English gardens	White flowers, ¾ in. across; Spring	This is a small shrub, seldom more than 4 feet high; it has slender branches, shining dark-green leaves and flowers, followed by small reddish-purple acid fruits. When grown as a standard it makes a round, half-drooping and graceful tree.
*P. japonica	China and Japan	Double, pure white	This is one of the prettiest of small shrubs when in flower. It is very charming against a wall, but is a success in the open, flowering freely, and for this reason makes an interesting and beautiful group. It grows between 3 and 4 feet high, and its long slender branches are often weighed down by the wealth of pure-white flowers. The leaves are tinged with red when young. The flowers of the variety flore-roseo-pleno are rich rose; it is a beautiful shrub. Increase only by layers or by cuttings; never graft.

PRUNUS JAPONICA. (*Syn. P. sinensis.*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*P. prostrata	Mountains of the Levant	Bright pink; Spring	Mr. Goldring in the *Gardener's Magazine*, April 6, 1901, p. 210, writes thus of this Cherry: "I am afraid that this species, which is a low shrub from the mountains of the Levant, is not very easy to obtain, yet it is one of the most delightful of dwarf cherries. It is a spreading plant with slender arching branches, but scarcely prostrate. The leaves are amongst the smallest in this group, being from a half-inch to one and a half inches long, and finely toothed. Nor are the flowers large, being a half-inch or little more in diameter, but in their profusion they almost hide the branches. The colour is a bright, and, among Prunus, unusual shade of rose. This shrub was known to Loudon, and was recommended by him. It has, indeed, been in cultivation for nearly one hundred years, but seems to have shared the fate of many other lovely hardy shrubs in the middle decades of last century, and almost passed out of cultivation. It grows at elevations of 5000 to 6000 feet, and is perfectly hardy."
*P. pseudo-cerasus (Japanese Cherry)	China and Japan	.....	This is a glorious cherry, and very popular in Japan; indeed, it is one of the most beautiful introductions we have had from that land of flowers. The recent double-flowered varieties should be in all gardens, and given a fairly moist soil and sunny situation, will bloom well. P. pseudo-cerasus goes under several names, such as Cerasus Sieboldi rubra, C. Watereri, and others. It is a small tree here, with stout greyish branches, and firm broad serrated leaves. *J. H. Veitch, with intense deep rose flowers, is very charming.
*P. pendula (Cerasus pendula rosea)	Japan	Deep pink; April and May	A beautiful tree of distinct weeping habit, and raised from seed quite readily, retaining its true character. The flowers are borne profusely, and sometimes open

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Prunus pendula (Cerasus pendula rosea)	Japan	Deep pink; April and May	in March. It is a tree that could be raised from layers. Mr. Bean, writing in the *Garden* of April 13, 1901, says: "Prunus pendula is as naturally pendulous in growth as the Babylonian Willow is, and it should, if possible, be obtained on its own roots. It is an early flowering kind—probably the earliest of the Cherries—being in bloom as a rule soon after April comes in. The flowers are of a lovely shade of delicate rose, but are not large. They are, however, freely borne, especially after a hot, ripening Summer and Autumn. In the United States it succeeds even better than here, and by some authorities is regarded as the loveliest of Japanese trees introduced to that country. So much cannot be said of it in Britain, but it is well worth cultivation for its beauty and earliness."
*P. serrulata (Cerasus serrulata)	Introduced from China about 80 years ago. Also a native of Japan	The flowers are in large loose heads, and are white, or white suffused more or less deeply with rose, and 1 inch to 1½ inch across. End of April	This is one of the most ornamental of the Cherries. It is naturally a small tree with a rather loose habit, and is peculiar by reason of its short-jointed stunted-looking branches. The leaves are fairly large and very evenly serrated. For lawns or shrubberies it is excellent, making a good companion plant to its own countryman, the large-flowered pseudo-Cerasus and its European cousins, Cerasus and Avium. In addition to being an excellent outdoor tree, it may be cultivated in pots for forcing for the conservatory in Winter and Spring.
*P. Mahaleb	Europe	White; April and May	The Mahaleb is well known for its remarkable profusion of pure white blossom and its free graceful habit. In the variety pendula, the pendent character of the branches is not unduly marked, but is sufficient to add greatly to the beauty of the tree. It is not only one of the best of Cherries, but of all flowering trees, and is as well adapted for planting

PRUNUS SERRULATA IN FLOWER. (*Spring.*)

THE DOUBLE-FLOWERED BIRD CHERRY.
(*Prunus Padus fl. pl.*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Prunus Mahaleb	.....	.....	in groups as it is when isolated as a single specimen. The flowers are borne on short racemes, and in such abundance as to envelop the tree in a snow-white mantle. Every garden should have at least one weeping Mahaleb.
P. Padus (the Bird Cherry)	Europe, and a great part of Asia	White; Spring	A well-known tree, and frequently seen in woodlands, where its strong scent is quickly detected. It is a shapely tree, growing 20 feet to 30 feet high, and has long erect branches, and in Spring drooping racemes of flowers 6 inches or more long. The fruits are small and shining black in colour. There are, however, many poor forms, sometimes with almost greenish flowers. Perhaps the most valuable is the double variety, flore-pleno, which has very long racemes and very pure white. Pendula is a weeping variety which will, no doubt, be an acquisition, but it is of too recent appearance here to say much about it. It is curious to note that there is a variety (stricta) with an exactly opposite tendency, branches and racemes being quite erect. P. virginiana, a nearly allied Bird Cherry from North America, is also represented by a pendulous form. P. serotina and its variety pendula, and the other members of the Padus group, are not important.
LAUROCERASUS GROUP.			
P. ilicifolia	California	White	A pretty evergreen with holly-like leaves, but only hardy in warm southern and western countries. It is a small bush, 6 feet to 8 feet high, and has short and erect flower racemes and deep-green leaves.
P. Laurocerasus (Cherry Laurel)	East Europe	White	A well-known evergreen, too freely planted in the past, and so vigorous as to overrun the garden in course of years. The varieties are more planted than the type, as they are handsomer. The most distinct are Bertini (latifolia), camelliæfolia, cau-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Prunus Laurocerasus (Cherry Laurel)	East Europe	White	casica, rotundifolia, and schipkaensis; the last mentioned is about the hardiest.
*P. lusitanica (Portugal Laurel)	Spain and Portugal	White	A popular evergreen. There are four varieties—azorica, which is very tender; coriacea; myrtifolia, small narrow leaves, and bears clipping well. P. ilicifolia is the only plant that need be raised from seed. The Cherry and Portugal Laurels, with their varieties, are usually propagated by cuttings, ripened wood of almost any size being cut into pieces 8 inches or so in length, and inserted nearly their full length in the ground. This can be done from the time the wood is ripe enough until the end of the year. Practically every cutting will root and make sturdy plants in a twelvemonth. The Portugal Laurel is also largely raised from seeds, which are gathered when ripe and sown immediately without any preliminary cleaning. If kept in sand until the following spring, they begin to grow before the season is sufficiently advanced to sow them, and if dried, nearly a year is lost before they germinate.
Pyrus	Rosaceæ	.....	An important and beautiful genus, as it includes the Pears, Apples, and Quinces of the hardy fruit garden, and such trees as the Flowering Crabs, the White Beam tree, Mountain Ash, and Pyrus japonica. It is divided into seven sections, viz., Pyrophorum, which includes the true pears; Malus, the Wild Crab apples, parents of many garden forms; Aria, of which the White Beam tree is a good type; Sorbus, in which is found the Mountain Ash; Adenorachis, which only contains the North American species, Cydonia, the Quinces, and Mespilus, with which is placed the Medlar. These are found practically throughout the northern temperate zone, under varying conditions, and with one or two unimportant exceptions, are

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Pyrus	.....	.....	all hardy in this country. The majority of the Pyrus are trees of considerable size. A few are small trees, and about half a dozen are low-growing and dense shrubs. All are deciduous, and will grow in ordinary garden soil, but none of them like a cold and moist soil and position. Ground that will grow Apples and Pears well will suit the Pyruses, though they will thrive in considerably poorer soil than is recommended for fruit culture. In planting, the ground should be deeply trenched, and the bottom well broken up, any clay or gravel that is encountered being thrown out and replaced with good soil. Most of the Pyrus root deeply, and if the soil is not properly prepared in the first place they are apt to fail and get cankered. Propagation is done by seeds, budding, or grafting, and in a few cases by suckers. The best ways are given with each section.
PYROPHORUM (the Pears).			
P. betulæfolia	China and Japan	White; early Spring	A small and pretty tree, 15 feet to 20 feet high, with leaves somewhat like those of a Birch in shape, though rather larger. They are on long petioles, and have a pleasing sound when ruffled by the wind. It does not flower or fruit much until well established. The white flowers are in dense clusters and appear before the leaves.
*P. communis (the Wild Pear)	Europe and Asia	White; Spring	As this is widely distributed it varies greatly. The type is more interesting for its flowers than for its fruit, which is hard, gritty, and dry. It grows 30 to 40 feet high, and has long spreading branches, half pendulous. When the tree is covered with its white flowers the effect is very beautiful. There are several named varieties, the best being flore-pleno, with semi-double flowers; linearis, with long, narrow leaves, and pendula, described by the name.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Pyrus nivalis	Eastern Europe	White; Spring	A small spreading tree which flowers in great abundance; the fruits are plentifully produced, and are nearly globular in shape, and of fairly good flavour, but dry. The habit of the tree and shape and flavour of the fruit suggest some of the garden pears. There is a variety with leaves variegated with white.
P. sinaica	Asia Minor	White; April	This is one of the few species worth growing for their leaves alone, for during Spring and Summer it is quite silvery. Although about 20 feet high in its native country, it makes here, as a rule, a small bushy stunted tree.
*P. salicifolia (Willow-leaved Pear)	Levant	.....	A beautiful tree, about 15 feet high, and delightful to make groups of for the sake of its long and narrow silvery-white leaves. There is a creeping variety of it. The flowers are white, and the fruits small and woody, neither of much account. It is the effect of the foliage that we must consider, which is very charming when waving in the wind. A good tree for grouping and for small gardens, and this remark applies also to the weeping form. The Pyrophorum group will come true from seed, which is the best way of propagating them. If not from seeds they can be worked on stocks of the Wild Pear, on which they do fairly well, though much better on their own roots. There are other species in this section, such as P. auricularis, P. Michauxi, P. parviflora, P. Pashia, and P. sinensis, but the above are the most important.
MALUS (the Apples).			
*P. baccata (Siberian Crab)	Himalaya to Japan	Rose pink; May	A well-known tree, very beautiful on the lawn. It grows 20 feet to 30 feet high, and as much or more in diameter, and the flowers smother every branch, followed by a glorious display of brilliant scarlet fruits, which are esteemed by some when preserved. There are several varieties, of which three may

PYRUS SINAICA.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Pyrus baccata (Siberian Crab)	Himalaya to Japan	Rose pink; May	be mentioned, Bertini, which is of rather more upright growth than the type, and has large white flowers and scarlet fruits; and Genuina, which differs from the type in its more open growth and larger fruits. Xanthocarpa has bright golden fruits.
*P. coronaria (American or Fragrant Crab)	Eastern United States. Introduced 1724	Rose; May and early June	A beautiful and neglected tree, 15 feet to 20 feet high, with large, deliciously-fragrant flowers. It is worth growing on this account alone. The leaves are dark-green and lobed, and the fruits sweetly scented and grass-green, not very ornamental. It should become more popular in English gardens. The variety flore-pleno has large, almost double, rich rose-coloured flowers.
*P. floribunda	Japan	Rose; late Spring and early Summer	A delightful tree and happily much planted in gardens. It is quite small, little more than a graceful bush, rarely exceeding a height of 10 feet, wreathed in flowers in the appropriate season, the buds intense crimson, but opening out a paler shade, and thus there is a gradation from one colour to the other. It should be freely grouped and planted in small and large gardens. The fruits are yellow, and about the size of a pea. There are two good varieties, Atro-sanguinea, which has flowers of much deeper colour than those of the type, and flore-pleno or Malus Parkmanni, as it is more often called. This has semi-double red flowers, and reddish wood and leaves.
P. Malus (Crab Apple)	Britain; Europe and Asia	White; late Spring	This is the Crab Apple of the hedgerow, and although not very ornamental, three varieties of it deserve notice. These are *coccinea, which has large scarlet fruits in abundance; flore-albo-pleno, with large semi-double, pure white flowers, and Neidzwetzkyanus, a very handsome form with purple-tinted leaves and fruit. But no tree can become popular with such a name. We hope it will be changed. Pendula is welcome for its drooping growth.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Pyrus prunifolia	Siberia	Rose; late Spring	This much resembles P. baccata, and has many varieties, one of them named pendula being a beautiful weeping tree.
P. Ringo	Japan	Late Spring	A small tree about 20 feet high, with rather long spreading branches, and large flower trusses followed by bright yellow fruits. These are sometimes borne so abundantly that the branches get weighed down.
*P. Schiedeckeri	Supposed hybrid (P. spectabilis, *P. Toringo)	Soft rose; May	This hybrid has for its near allies such popular and beautiful plants as Pyrus floribunda, P. spectabilis, P. baccata (Siberian Crab), &c.; yet it is not inferior in beauty to any of them. It is only in recent years that it has been in commerce. It has not, of course, reached its full size yet in this country, but it is evidently going to be a small tree. It is nearly related to P. floribunda, but gives every indication of possessing a more tree-like character, its branches being sturdier and more erect in growth. But it is for its wealth of blossom that it is chiefly remarkable. Even among such profuse-flowering things as those of its allies mentioned above, it is noteworthy for its qualities in that respect. During May, its flowering season, clean branches 3 feet and even 4 feet long can be cut, which are wreathed from end to end with blossom. The flowers are semi-double and come in the usual Apple-like clusters; each flower is about 1½ inches across.
*P. spectabilis (Chinese Crab)	China and Japan	Pink; Spring	A beautiful and fairly well known tree, 20 feet to 30 feet high, with large semi-double flowers of much charm; the fruits are bright red. Every garden should possess a group of it, and at least a single specimen standing out by itself, unfettered by trees or shrubs near. There are three varieties of note: flore-pleno-albo, with white flowers; flore-pleno;

PYRUS SPECTABILIS ON LAWN. (*Spring.*)

THE SIBERIAN CRAB (Pyrus Malus baccata) SHOWING ITS BEAUTY ON LAWN. (*See p. 065.*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Pyrus spectabilis (Chinese Crab)	China and Japan	Pink; Spring	and Kaido, which is a very charming tree, upright in growth, and with rose-pink flowers and yellowish-red fruits. These trees of the Malus section are usually propagated by being budded or grafted on stocks of the Common Crab. If any of them are growing singly away from other species, then seeds from them will come true to name, but where various species are growing together they become crossed when in flower, and the seedlings result in a variety of hybrids, few or none of which are of any value. But as all of them succeed very well when worked on Stocks of the Common Crab, this is probably the better way to propagate them.
ARIA (White Beam trees)	.....	.....	A very distinct group.
Pyrus Aria (Common White Beam tree)	North Temperate Zone	White	A well-known tree, frequently seen in chalky districts. It is a large tree, 40 to 50 feet high, and has oval leaves, which are silvery white on the under surface. The white flowers are borne in large clusters, followed by oval red or scarlet coloured fruits. There are several varieties. Lutescens is very handsome, with its broad and silvery leaves; chrysophylla has leaves of quite a golden hue; græca is a handsome form found in Greece, it is much later in flowering and fruiting than any of the others; salicifolia has striking leaves, quite silvery white underneath.
P. decaisneana	Origin unknown; presumably a hybrid	.....	A handsome vigorous tree, with oval leaves, 6 inches long by 2 to 3 inches broad, silvery beneath. The pinkish flowers are on large dense corymbs, followed by bright scarlet fruits. A tree well worth growing.
*P. lanata	Himalaya	White	This is better known under its garden name of Sorbus majestica, and is perhaps the most beautiful of this section of Pyrus. It is an upright-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Pyrus lanata	Himalaya	White	growing tree, 30 feet to 40 feet high, with large serrated leaves, covered beneath with a dense silvery tomentum. The flowers are succeeded by corymbs of intense scarlet fruit. P. pinnatifida is also of note for its silvery leaves.
P. vestita	Northern India	White	Thoroughly hardy in this country, and a handsome tree, met with commonly under the names of P. Thomsoni and Sorbus magnifica. It has large oval silvery leaves, and is worth growing for this reason alone. The white flowers and scarlet fruit are an additional charm. The above are all best propagated from seeds, which are freely produced, and come true to name, with the exceptions of P. alpina and P. decaisneana, which, being hybrids, cannot be depended on. These two, and the varieties of P. Aria, are best worked on stocks of P. Aria, on which they succeed very well as a rule, care being taken to choose clean, vigorous stocks with straight stems.
SORBUS.			
Pyrus americana	North America	White	This is the American Mountain Ash, and is not a great success in this country. It is of smaller growth than our Mountain Ash, and has pinnate leaves and clusters of red fruit, which, like those of most of the Pyruses, are much liked by birds. There are several varieties.
*P. Aucuparia (Mountain Ash or Rowan tree)	Native	White; Spring	This adds a brilliant note of colour to the garden landscape in Autumn, and is the glory of many a Scotch and Welsh ravine. In the north the berries are very rich. There are many varieties; the best are asplenifolia, a very handsome tree, with finer leaves and more deeply serrated leaflets than those of the type; dulcis, a handsome, vigorous variety, with bold foliage and larger fruits than those of any of the other Mountain Ashes. Fastigiata has somewhat the habit of the Lombardy Poplar; fructu

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Pyrus aucuparia (Mountain Ash or Rowan tree)	Native	White; Spring	luteo has bright yellow or orange fruits, which are freely borne and very showy; pendula is a weeping form with branches that sweep the ground.
P. lanuginosa	Eastern Europe	Dull white	This is a showy tree, 30 feet to 40 feet high, with pinnate leaves, woolly on both surfaces. The fruits are red.
*P. Sorbus (Service tree)	Native	White	This is more commonly known under the names of P. domestica or Sorbus domestica, and is like the Mountain Ash in leaf, though more spreading in growth. The flowers are succeeded by green fruits about the same size as those of a Crab Apple. There are two forms, viz., maliformis, with apple-shaped fruits, and pyriformis, with fruits shaped like those of a pear.
P. thianschanica	Eastern Asia	White	This is a comparatively new introduction, but a valuable tree. It has reddish-coloured shining wood and pinnate glossy leaves, with pointed and serrated leaflets. The fruits are small and scarlet. The above can, and should, be propagated from seeds, which germinate readily, and the seedlings soon form strong plants. The varieties of the Mountain Ash should be worked on that species, and, if absolutely necessary, most of the other species can be increased in the same manner and on the same stock. We have seen P. lanuginosa worked on a Hawthorn stock, on which it succeeded very well, but should not recommend the Hawthorn as a stock for any of the Pyruses.
ADENORACHIS.	.....	.....	Not a very important group, containing two species, P. arbutifolia and P. nigra. Both are easily raised from seeds, but the quicker way is to detach suckers.
CYDONIA (the Quinces)			
Pyrus cathayensis	China	Rosy red; late Spring, early Summer	Best on a wall as at Kew. Bolder in growth than P. japonica, but not so hardy. Very handsome on a wall.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Pyrus Cydonia (Syn Cydonia vulgaris)	Unknown	Flesh	The Quince is for the garden orchard. "How seldom does one see Quinces planted for ornament, and yet there is hardly any small tree that better deserves such treatment. Some Quinces planted about eight years ago are now perfect pictures; their lissome branches, borne down with the load of great deep-yellow fruit, and their leaves turning to a colour almost as rich and glowing. The old English rather round-fruited kind with the smooth skin is the best both for flavour and beauty—a mature tree without leaves in winter, has a remarkably graceful, arching, almost weeping growth. The other kind is of a rather more rigid form, and though its woolly-coated, pear-shaped fruits are larger and strikingly handsome, the whole tree has a coarse look, and just lacks the attractive grace of the other. They will do fairly well almost anywhere, though they prefer a rich loamy soil, and a cool, damp, or even swampy place." —*Wood and Garden*, p. 128.
*P. japonica	China and Japan	Scarlet; April, earlier in some gardens	A beautiful shrub, one of the most valuable introductions that we have ever had from China and Japan. It is the "japonica" of many a cottage and villa wall, and in sheltered warm gardens begins to bloom before winter has gone, a bright, cheery, and welcome shrub indeed in border or on wall. It is so well known that a description is almost needless, but there are several varieties, with considerable range of colour, from white to scarlet. We give the six from the Kew list: candicans, white; luteo-viridis, yellow; Moerloesi, crimson; nivalis, white; sulphurea perfecta and versicolor lutescens, both yellowish. All the varieties are good, but one in particular we prize highly, that is Knap-Hill scarlet, which is a brilliant scarlet, delightful in a group; it is a most valuable shrub.

PYRUS (*Mespilus*) *LOBATA*.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Pyrus Maulei	Japan	Orange scarlet; May	A charming shrub, dwarfer than P. japonica; the fruits are yellow, and have a pleasant aromatic odour, and, like those of P. japonica, make an excellent preserve. Superba is a variety or rather reputed hybrid between P. Maulei and P. japonica, and has deep scarlet flowers. The Quince can be propagated by seeds, by cuttings, or by layers. Cuttings of well-ripened wood about 9 inches long should be taken in autumn and inserted 6 inches in the ground, when they soon form roots and make sturdy plants. P. japonica and P. Maulei can be increased by seeds, by suckers, or by root-cuttings. Suckers are freely produced by old plants, and can easily be detached, so that this method is the easiest means of propagating them.
MESPILUS.			
*Pyrus germanica (the Medlar) (Syn Mespilus vulgaris)	Europe and Asia	Pure white; early Summer	A small tree for the garden, orchard, or woodland. It is handsome in leaf and growth, a dense spreading tree, with fruits of acceptable flavour when eaten at the right stage.
*P. lobata (M. Smithi; M. grandiflora)	Unknown; probably a hybrid	White	A very handsome but neglected tree, about 20 feet high, with dark-green leaves and snow-white flowers, rather smaller than those of the common Medlar; it has small pear-shaped reddish fruits, and is a good lawn tree. These trees are best propagated by grafting or budding on the Pear or Quince stocks, on which they do well. The Medlar can also be increased by seed.
RHODODENDRON SPECIES.			
R. arboreum	Himalaya; Ericaceæ	Bell-shaped, various colours—blood-red, white, rose, and, as a rule, spotted	This is a famous Himalayan Rhododendron, a tree attaining a height of 40 feet in its native country. It has bold, thick foliage, green above but quite silvery beneath, and the bell-shaped flowers vary in colour. There are several varieties, such as album, cinnamomeum, kingianum, Nilagiricum,

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron arboreum	Himalaya	Bell-shaped, various colours—blood-red, white, rose, and, as a rule, spotted	puniceum, and others, but difference in flower colouring is the chief reason for distinctive names. Not hardy except in a few very favoured spots, chiefly Cornwall and south-west generally. Must be grown under glass, and requires a big house. Many beautiful trees in the Temperate House at Kew.
R. barbatum	Sikkim	Bell-shaped, blood-red, 1½ inches across	This is a tree 40 feet to 60 feet high in its native country. It is hardier than R. arboreum.
R. californicum	California	Rose-purple, upper petal spotted with greenish yellow; broadly campanulate, almost without a tube. Good sized umbels; June	This is a strong-growing Californian species, the leaves dark-green; fairly hardy.
R. campanulatum	Himalaya	Lilac, with purplish spots; June. Leaves elliptic or elliptic oblong, blunt as a rule at both ends, April	This is a beautiful species, about 4 feet high. We have seen it in several Surrey gardens, but it requires shelter. It is not one of the hardiest.
R. campylocarpum	Himalaya	Bell-shaped, clear, pale yellow, 2 inches or so across, in rather loose clusters; May or late April	The best hardy yellow Rhododendron at present known is this. It is hardy at Kew in sheltered spots, but succeeds better farther to the south. It is a shrub of neat compact habit, with leaves 2 inches to 3 inches long, dark-green and glossy above, blue-white beneath. When full of flower it is a singularly pretty and distinct Rhododendron. It varies somewhat in shade, and the flowers are sometimes of a pale lemon tint, becoming almost white with age. The late Mr. Mangles, we believe, raised some hybrids from this species, but we know of none in commerce.

RHODODENDRONS ARBOREUM HYBRID. (*Outdoors, Kew*)

HYBRID RHODODENDRON IN DONEGAL. (*A wild bit of planting*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron catawbiense	Mountainous regions of Southern United States	Good-sized heads of lilac or purplish flowers; late May and June	This is a strong growing species and one of the hardiest of all Rhododendrons, and has played a large part in the production of the present race of garden Rhododendrons, and is with R. ponticum the best stock on which to graft the various varieties, and is useful for covert. It is hardier than R. ponticum, and varieties with much of the Catawbiense blood in them are hardier than those closely allied to other species. Fastuosum fl. pl. is a well known form.
R. caucasicum	Introduced nearly a century ago from high rocks close to the snow-line in Caucasus	Rose or whitish green spotted flowers, in compact and upright clusters	This is a quite hardy Rhododendron. The true species is rare in gardens, but there are several forms, and it has been used to a great extent by the hybridist. It is dwarf, spreading, little more than a foot high, with ovate leaves with brownish tomentum on the under surface. It flowers late in July or in August, but its progeny is in beauty during May and June. A hybrid, which flowers at a considerable earlier date than the others, is nobleanum; it claims R. arboreum as its other parent, and flowers from December onwards until the end of March. At Kew there are several large groups in the Rhododendron dell.
R. ciliatum	Sikkim	Flowers are white, suffused with rose; April outdoors	This is a Rhododendron more adapted, except in the quite southern counties such as Cornwall, South Wales, &c., for a cold house. It is of compact and bushy growth, 2 feet or 3 feet or less high, but varies according, of course, to locality, and is part responsible for a number of hybrids, such as præcox, Rosy Bell, and Queen of Dwarfs. The hybrids mentioned are all hardy, but owing to their early flowering often get injured by frost.
R. cinnabarina	Himalaya	Flowers are tubular, with short, spreading limb, pendulous, and	This is a very distinct-looking shrub, about 3 feet; but only an approximate height can be given, as it is sometimes more than this. The growth is somewhat loose, and the

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron cinnabarina	Himalaya	orange-scarlet, orange, or red; they vary somewhat in size, but are usually about 2 inches long and ⅜ of an inch across the mouth, and thick and fleshy	branches upright and slender, the leaves ovate, 2 to 2½ inches long, and glaucous. Only moderately hardy.
R. dauricum	Alpine regions of Eastern Asia	Rosy purple; January	This is quite hardy, but flowers so rarely that it is only seen in beauty very often in a cold house. It is almost deciduous, as most of the leaves fall off in winter. It is a bush, and has been crossed with R. ciliatum, the well-known præcox and Rosy Gem being two of the hybrids.
R. ferrugineum (Alpine Rose)	European Alps. Introduced about 150 years ago	Flowers small, funnel-shaped, and in small upright terminal clusters in June; bright rose or scarlet	This is frequently seen in rock gardens, and grows about 1 foot high, forming a rounded mass thickly clothed with small green leaves, covered with minute reddish-brown spots. When young the leaves are slightly hairy, but the mature foliage is almost free from hairs. There are varieties, one with white (albiflorum), another with rosy or scarlet flowers (myrtifolium), but there are others. Its popular name is Alpine Rose.
R. Fortunei	China	Fragrant, pale rose-coloured flowers, with seven petals; Mid-May	This is one of the hardiest of the Himalayan species, and, as it does not flower until well into May, it is generally untouched by late frosts, which so disturb early-flowering species. It grows from 10 feet to 12 feet high, and has large, handsome oblong leaves. It is the origin of a distinct race.
R. fulgens	Eastern Himalaya	Blood-red; April and May	There are several forms of this Himalayan Rhododendron in gardens, the best producing compact clusters of medium-sized flowers of the colour mentioned. The leaves bear a striking resem-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron fulgens	.....	.....	blance to those of R. campanulatum in both size and colour. Although hardy, it is seldom seen in true beauty outdoors, because of its naturally early-flowering season.
R. glaucum	Himalaya	Rose, waxy, ¾ of an inch across, and in small upright heads; May	This is a dwarf species, with small oblong leaves, seldom more than 2 feet high, and rarely seen in cultivation, although very pretty.
R. hirsutum	Alps	Pale red; May and July	In many ways this is the counterpart of R. ferrugineum, the chief difference being in the intensely hairy leaves of this species. The two species grow side by side in the Alps, and the one under notice is one of the few species that will grow in a limy soil. It has also been used by the hybridist.
R. Keysii	Bhotan	Flowers tubular, red and yellow, and 1½ inches long; May	A distinct, upright-growing, scantily branched species, suggesting affinity to R. cinnabarina, but it is quite distinct. It grows from 4 feet to 6 feet high, has narrow ovate or lanceolate leaves 2 inches long.
R. lepidotum	Temperate and Alpine Himalayas	Colour varies, usually purple and yellowish; curious flattened form, and about 1 inch across; May and June	The individual flower does not suggest a Rhododendron, so unlike other species is it in this respect. It is a low-growing plant with small oblong leaves; it succeeds outdoors at Kew.
R. maximum (Great American Laurel)	North America	Rose, or whitish spotted with yellow or red	This will grow to a height of 35 feet, and has large, thick, elliptical, oblong leaves. It is not much grown here. In the "Cyclopædia of American Horticulture," it is mentioned: "This is one of the hardiest species, being hardy as far north as Quebec and Ontario. . . . This species and the former (catawbiense) are now often extensively used in park-planting, and taken by the car-load from the woods. If properly handled and taken from a turfy soil with a sufficient

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron maximum (Great American Laurel)	North America	Rose, or whitish spotted, with yellow or red	ball of earth around the roots, they are usually successfully planted." There are three varieties, album, purpureun, and roseun.
R. Metternichii	Japan; known here about 30 years	Rose; about 2 inches across, and in small clusters; March	This is not in general cultivation, but is hardy. As yet no opportunity has arisen of ascertaining to what dimensions it will grow in this country; it has thick and leathery oblong leaves, 3 to 4 inches long, green above, and covered underneath with a thick grey or brownish tomentum.
R. niveum	Himalaya; 8 to 9 feet	Purplish; April	At Kew this species lives outdoors, but is not a success, and even in Cornish gardens gets injured in severe weather. It makes a dense bush, with medium-sized leaves, green above, and covered with a dense greyish tomentum beneath. It has been in cultivation about 40 years.
R. ponticum	This has a curious distribution, being found in Portugal and not again until Asia Minor is reached	Purple; about 2 inches across; May	Of all the hardy Rhododendrons this is the most largely grown and most popular; it is much used as an undergrowth in woods and other places. In many parts it has become naturalised, reproducing itself from self-sown seeds. It has been much used by the hybridist, and with R. caucasicum and R. catawbiense has produced many beautiful hybrids. It will grow beneath trees, and its evergreen foliage is not the least of its attractions. There are several varieties.
R. punctatum	North America, Alleghany Mountains, from North Carolina to Georgia	Flowers rose; 1 inch across; in clusters in June	A dwarf and evergreen species. R. minus is a synonym.
R. racemosum	First exhibited by the introducers, Messrs. Veitch, in 1892, and is a native of Western China, where it is found 6000 to 10,000 feet elevation	Pink-white; April	The introduction of this added another type to this genus, for both in flower and general habit it is distinct from other species. It is dwarf, with small oval leaves, and flowers borne in axillary and terminal clusters, and so profusely that every branch is a mass of blossom. It is quite hardy and very welcome. There is a form with deep rose flowers.

RHODODENDRON PRÆCOX. EDINBURGH BOTANIC GARDENS. (*See p.* 085.)

RHODODENDRON SAPHO IN IRISH GARDEN. (*Donegal.*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron Rhodora (Rhodora canadensis)	North America	Magenta-purple; April	Not much grown, but colour probably not popular. It makes an upright deciduous shrub, 3 feet to 4 feet, slender, twiggy wood, and small ovate lanceolate leaves. Should have moist peaty soil. A failure on dry and sandy ground. Does not object to partial shade. Easily increased by seeds and layering.
R. Smirnowi	Caucasus	Crimson-purple; 3 inches across; April and May	This has large flowers and leaves, and, as recorded elsewhere, has founded a distinct race. It blooms freely when about a foot or so high. The leaves are about 5 inches long, 2 inches wide, and covered on underside with a soft white felt.
R. Thomsoni (see page 80)			
R. yunnanense	Yunnan; first flowered at Kew in 1899	White, with blood-red spots on upper petal; in loose clusters in May	This is an erect shrub, with glossy green leaves 2 to 2½ inches wide. A very useful shrub, and should not be forgotten by the hybridist.
R. HARDY HYBRID	.....	.....	Very few of the species of Rhododendron have not some value either for out of doors or under glass. Rhododendrons are widely distributed, species being found in North America, Europe, and through temperate Asia as far south as the Malay Peninsula, the headquarters of the genus being Western Asia and the temperate Himalaya. Rhododendrons also differ greatly in size, some very tall as R. arborea, which is sometimes said to grow to a height of 40 feet in the Sikkim forests, to the little alpine R. chamæcistus, which rarely exceeds 6 inches high. There is quite as marked variation in the size of the leaf, several species, of which R. Falconeri may be taken as a type, having large and handsome leaves, sometimes a foot high and 6 inches wide, whilst the quaint little Japanese species R. serpyllifolium has tiny leaves not a third of an inch long and of corresponding width. The Rhododendron

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron Hardy Hybrid	Ericaceæ	.....	family may be divided into two great sections, deciduous and evergreen. The evergreen section consists of a large number of species, either quite hardy or tender, the tender ones being represented by such beautiful flowers as R. griffithianum, Edgeworthi, R. Dalhousiæ, R. Nuttalli, the Malayan species, &c. With the exception of R. ponticum true species are seldom met with outdoors, except in gardens where collections are formed, or in the south-west countries. The scarcity of species is doubtless due to many of the hybrids being much hardier, and begin to flower and grow at a later time of the year. Although some of them will stand severe frost in mid-winter without injury, growth beginning early in the year, the young leaves and shoots get considerably injured by the late spring frosts, and flowers when open in March are also destroyed or much spoilt. In Cornwall, South Wales, and parts of Ireland, huge specimens of R. arboreum, barbatum, grande, Falconeri, griffithianum, and others may be seen in full vigour, but all have to receive protection from the north. Although these species cannot be grown successfully outdoors in most parts of the country, the hybridist knows their value. Through crossing them with hardier and later growing and flowering species many beautiful hybrids have been raised. Hardy evergreen hybrid Rhododendrons may be divided into several groups according to parentage. Of these groups by far the most familiar is the one that has originated through the crossing and intercrossing of the Himalayan R. arboreum with the American R. catawbiense, the Caucasian species R. caucasicum, or the Euro-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron Hardy Hybrid	Ericaceæ	.....	pean and Asiatic ponticum. This hybridising has been progressing for half a century or more, and the parentage is plainly seen in the offspring. Thus where R. arboreum asserts itself most strongly we find rich red flowers and leaves with a silvery under-surface. Where R. catawbiense is most in evidence the leaves are large and handsome, deep green, and softer to the touch than R. arboreum, while the clusters are often of great size, the flowers prettily spotted, and the plants of exceptionally good habit. For very cold districts the catawbiense hybrids are the best, being hardier than the others. The flowers of many of the earliest of the R. catawbiense hybrids are of lilac or purple colouring. The influence of R. caucasicum is most plainly shown in the rose, white, and heavily spotted varieties, whilst it also imparts some of its sturdy habit to its progeny. R. ponticum shares with R. catawbiense the honour of producing many of the best lilacs and purples, but through so much intercrossing it is difficult to trace the influence of any particular species in many of the newer hybrids. In this group raisers are fastidious, regarding the shape of the inflorescence as of first importance, that is, a conical truss of symmetrical outline, the flowers on short stalks and held firmly in the truss. In the Rhododendron dell at Kew many of these hybrids are to be seen, and in a number of the older ones it is not difficult to trace the influence of the various species mentioned. Some of those which show much of the catawbiense character are album elegans, white with yellow spots, delicatissimum, blush, everestianum, lilac with darker spots, fastuosum fl. pl., double lilac, and purpureum

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron Hardy Hybrid	Ericaceæ	.....	elegans and purpureum splendens, with dark-spotted flowers. R. arboreum blood is very noticeable in the early flowering, bright-red nobleanum, the rich red russellianum, and russellianum superbum, the white dark-spotted Baron Osy, the blush or almost white Blanche superb, and many others, whilst R. ponticum is in evidence in a large number of hybrids. In addition to this group there are others which, though not so universally grown, are quite as beautiful. For a number of years other species besides those worked on to produce the last-named group have been taken in hand in several places, notably at Tremough by Mr. Gill, and all who are interested in shrubs know the great work accomplished by Messrs. Anthony Waterer of Knaphill, John Waterer & Sons of Bagshot, Wm. Paul & Son of Waltham Cross, George Paul of Chesthunt, Fisher, Son & Sibray of Sheffield, Messrs. J. Veitch, and in the Royal Gardens, Kew.
R. Thomsoni	Sikkim	Blood red; June	R. Thomsoni may be taken as a type of a group in which it has played a great part. This species is hardy even near London, and farther north, but flowers very early, so much so that frost frequently destroys its beauty. It grows from 6 feet to 15 feet, has broadly ovate leaves and loose trusses of six or eight waxy flowers.
R. Luscombei	Hybrid between R. Thomsoni and R. Fortunei	Rich rosy red; April	This was raised by Mr. Luscombe about thirty years ago. It is finely represented in the Arboretum at Kew, the largest specimen being 8 feet high and as much through. The flowers are in loose trusses, tubular, 3 inches across, and very waxy; a handsome hybrid.
R. F. Thiselton-Dyer	Hybrid, same cross as Luscombei	Deep rose, with darker mark at the base of the tube	This is a Kew-raised hybrid, and very similar to Luscombei in growth.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Rhododendron Ascot Brilliant	Raised by Mr. Standish	Rich scarlet; mid and late May; a peculiarly brilliant colour	This is a flower of wonderful colour, and the whole shrub in growth, size of calyx, texture, and clusters reminds one strongly of R. Thomsoni. It is of dwarf and bushy growth, and flowers with great freedom.
*R. Shilsoni	Raised by Mr. Gill, gardener to Mr. H. Shilston, Tremough, Penrhyn, Cornwall, between R. Thomsoni and R. barbatum	Crimson	This beautiful hybrid combines the good qualities of both parents. It resembles R. barbatum in height and R. Thomsoni in foliage, and the flower truss is compact as in the former parent, with the larger, more fleshy leaves of the latter. It is an exceptionally fine Rhododendron for Cornwall, but at Kew is grown in a cold house, although a small plant withstood the winter of 1901–2 outside without injury.
R. Harrisii	A hybrid raised by Mr. Harris, at one time gardener to Lord Swansea; the parents are R. Thomsoni and R. arboreum	Red; early Spring	This is a hybrid of much interest, and flowers freely when quite small. It is apparently quite hardy, but would be happier in the south than elsewhere.
GRIFFITHIANUM GROUP.			
*R. Aucklandi	Himalaya	White; May	The group, in which the Himalayan species griffithianum, better known as R. Aucklandi, is most marked, is composed of a number of large-flowered hybrids which vary considerably in size of flower and colouring. It is probably the finest species of Rhododendron in existence, and named in honour of Lord Auckland, a Governor-General of India, by Sir Joseph Hooker. It appears, however, to have previously been named after Griffith, the Indian botanist, whose name it ought now properly to bear. It carries its flowers in large, loose trusses, and individually they are frequently 6 inches across. This Rhododendron, we believe, ranks first in the genus in regard to the size of its bloom. Six or eight of these are borne in a truss, and they are pure white when once fully expanded, although pink

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Rhododendron Aucklandi	Himalaya	White; May	in the bud state. The handsome leaves are smooth, narrow-oblong, 6 inches to 12 inches long, and of a deep lustrous green. When fully grown this becomes a small tree, the bark peeling from the trunk in large flakes. It is not, unfortunately, one of the Himalayan species that can be grown out of doors near London. In Cornwall and similar places it is magnificent. It only just escapes being hardy, and can be grown out of doors in tubs for the greater part of the year. Some of the best specimens in the country have, in fact, been grown in this way. Even when placed under glass little or no fire-heat is needed. We know plants that have stood 18° of frost without injury. It is remarkable that this Rhododendron has not been used more for hybridising. Most people seem to have been slow in awakening to its value, and although, at the present time, there are doubtless thousands of young hybrids from it in existence, it will be some years before they flower. There are, however, a few hybrids that are hardy and very beautiful.
*R. kewense	A hybrid between R. griffithianum and R. Hookeri	Delicate rose, passing to white with age; April and May	This was raised at Kew in 1875, but did not flower until fourteen years later. Since then it has flowered very freely every year. It makes a large bush 6 to 8 feet high, spreading, and with leaves resembling those of R. griffithianum, and the flowers as regards shape and size being also similar, whilst they are very sweetly scented. In addition to the true Kewense, there is a form in cultivation with red flowers. The bracts are light red. Kewense is a hybrid of charming colouring—so many shades of rose and deeper-tinted buds.
*R. Manglesii	Hybrid sent out about 1880 by Messrs. Veitch & Sons, and the out-	White, the upper petal spotted with red or	This is a very beautiful hybrid, popular, and very free. Although the leaves are smaller, this Rhododendron—named

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron Mangiesii	come of crossing R. griffithianum with the catawbiense hybrid album elegans	reddish brown; April and May	after one whose interest in the race was intense—resembles the Himalayan parent when not in bloom, but the influence of the American parent is seen in the flowers, which are about 4 inches across. A peculiarity of the inflorescence is the long truss. There are several forms, that only differ slightly in size or density of the spotting from the type.
*R. Pink Pearl	Raised by Messrs. J. Waterer & Sons of Bagshot	Delicate pink; May	This beautiful Rhododendron has rapidly become popular. The leaves and size of flowers point to the griffithianum influence. The flower truss is very large, well formed, and the individual flowers 4 to 5 inches across. No doubt new hybrids with R. griffithianum influence will be constantly occurring, but raisers must remember that hardy growth is of the greatest importance. R. griffithianum has been much used by Mr. Mangles as a parent, in whose garden there are many beautiful hybrids, such as Liza Stillman, Dulcie Daffan, Manglesii var delicatum, Daphne Daffan, Mrs. Mallard, and others.
FORTUNEI GROUP.			
R. Fortunei	China	White with deep pink suffusion, and very fragrant; May and early June.	This species, when not in flower, bears a strong likeness to R. griffithianum, but the flowers are very distinct, about 3 inches across, and very fragrant, whilst each one has seven petals. The hybrids are of good habit, flower with great freedom, are very fragrant, and each bloom frequently has six petals, whilst the stamens are often imperfect. The group displays a wide range of colouring, pink and deep rose predominating, but a few are red, and many are prettily spotted or blotched with red or chocolate. We hope this group will be better known, as many of the hybrids are very charming, a few having names; thus those raised at Kew were named respectively Mrs. Thiselton-Dyer and George

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron Fortunei	China	White, with deep pink suffusion, and very fragrant; May and early June	Thiselton-Dyer. They bloom profusely, the flowers being very deep rose with dust-brownish blotches at the base; the chief difference is that the flowers of the former are paler than those of the latter. An interesting hybrid raised at Kew by crossing R. Fortunei with the variety Meteor has flowered well for the last four years. The cross was made in 1893, and the plants flowered when only a few inches high. Several plants have now grown to a height of 2½ feet. The flowers are in compact, rounded trusses, and appear in May; they are delicate pink, and fragrant. The great peculiarity of the hybrid is that no plant has perfect stamens, some being full size but barren, others reduced to mere specks, and occasionally they are quite absent.
R. Smirnowi	Native of Caucasus. Flowered for the first time in England at Kew in 1893	Bright rosy-lilac; April and May.	This is a handsome species, of compact growth, and 3 feet to 6 feet high, with large, deep-green leaves, covered on the underside with quite a dense, whitish, wool-like substance. The flowers are from 2½ inches to 3 inches across, and in shapely trusses. Both at Kew and in the nursery of Mr. George Paul many hybrids have been raised. The first raised at Kew resulted from crossing the species with the scarlet-flowered garden hybrid Johnsoni in 1893. It flowered when four years old, and was of dwarf growth, with rosy-red flower. Of numerous other hybrids raised since then three resulted from crosses made in May 1896; they flowered in May 1902, and are so far the best. One of these was raised by crossing with the variety purpureum splendens; this has trusses of purplish flowers. Another claims R. Fortunei as its male parent; it has large fragrant flowers with five or six petals, pink, and arranged in shapely trusses. In the third case kewense

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron Smirnowi	Native of Caucasus. Flowered for the first time in England at Kew in 1893	Bright rosy-lilac; April and May	was selected as the male, and this is the pretticst of the three; the flowers are on long stalks, droop, and have daintily fringed petals; they are fragrant, rose colour, mottled with dark spots in the throat. The somewhat drooping character of the flowers is not an advantage.
R. azaleoides	Cross between R. (Azalea) viscosum and R. maximum	White, lilac-tinted flowers; June	This grows about 3½ feet high, and, as the parentage shows, is a cross between the evergreen and deciduous sections. It has been known under the names of hybridum, fragrans, odoratum. Quite hardy.
*R. Smithi aureum	This is not new, but rare; it is supposed to have been raised by a nurseyman named Smith of Norbiton, between a variety of R. caucasicum and a yellow form of R. sinense, and is said to have been exhibited at Chiswick in 1841	Buff inclining to apricot; June	This is a very beautiful Rhododendron, dwarf, not very compact in growth, but when its handsome flower clusters are out the bush is almost smothered with bloom. At Saltwood, near Hythe, in a Rhododendron glen Mr. Leney has several plants of it. A glaucous-leaved form is in cultivation, but the flowers are not so rich in colour as those of the plainer leaved one. Quite hardy.
R. roseum odoratum	Hybrid between the two sections. One a white-flowered deciduous variety, and the other a red-flowered evergreen form	Reddish; June	Quite hardy.
R. altaclarense	Result of crossing R. catawbiense and R. ponticum. Flowered first iu 1835. Raised at Highclere	Bright scarlet	A very charming, bright flowered hybrid.
*R. præcox	A hybrid between R. ciliatum and R. dauricum	Rose-purple; late February and early March	This hybrid is quite hardy, but must have a sheltered spot, if not grown in a cool house for the sake of its colour, as it blooms early in Spring, and therefore is apt to get spoilt by frost and rain. It makes a bush about 3 feet high, spreading, with a profusion of flowers, very rich in colour, but the variety rubrum is darker than the type.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Rhododendrons (Azaleas)	.....	.....	For many years the hardy, deciduous Rhododendrons were known only as Azaleas, and in many places the name Azalea is still maintained. When the two sections—deciduous and evergreen—are compared it will be at once seen that there is no real structural difference between them. Although in the making of the two genera the number of stamens was considered one of the principal points, it has since been shown that it is a point unworthy of notice, as the number of stamens varies considerably in both deciduous and evergreen species. It is doubtful whether the name of Azalea will disappear, but we are following here the latest classification, and therefore place the "Azalea" in its proper group. About 80 species have been known under the name of Azalea, 3 or 4 of which are evergreen, and the remainder deciduous. Of these about half-a-dozen are really well known in gardens, either by the type plants, hybrids, or garden forms. The majority of the species belong to China and Japan and North America, one species being found in the Caucasus. Several of the North American species, such as R. arborescens, calendulaceum, nudiflorum, &c., the Chinese and Japanese species R. sinense (better known as Azalea mollis), and the Caucasian flavum (Syn Azalea pontica), have proved splendid breeders, and in the hands of the hybridist a wonderful assortment of varieties has been obtained, which for delicate shades and rich self-colourings are unsurpassed among hardy shrubs. The colours range from white to pink and from pink to blood-red, from lemon to deep yellow and orange-scarlet, with all descriptions of intervening

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Rhododendrons (Azaleas)	.....	.....	shades and combinations of colour. From R. calendulaceum most of the orange and orange-scarlet and red forms have originated; flavum has been responsible for many of the yellows and terra-cottas; arborescens, occidentale, and viscosum for the whites and pale rose varieties, also for the late flowering ones; while R. nudiflorum has been responsible for a great number of hybrids of all shades. As a rule it is much easier to trace R. sinense blood among hybrids than that of other species, the flowers in that case being larger and the leaves more closely resembling those of the species, but even in some of these repeated intercrossing has almost obliterated the special sinense characters. Many of these hybrids have been raised in the old-world city of Ghent, a fact which has given rise to the name "Ghent Azaleas." In England Mr. Anthony Waterer has raised beautiful forms at Knaphill, such as the pure white Mrs. Anthony Waterer. Few are named, however, nowadays, this brilliant group being called the "Knaphill," and it is rich in beautiful colours, from white through yellow, orange, buff, crimson, scarlet, and other flaming tones, which create glorious pictures in the garden in late Spring and early Summer. The shrubs should be planted in groups in woodland and elsewhere when the rich colouring of the flowers is most effective, and in Autumn the foliage turns to warm tints, crimson, brown, purple, and other shades intermingling, making the bushes almost as beautiful in their Autumn dress as when covered with flowers in Spring and early Summer. Of late years these Rhododendrons, especially the sinense group, have

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Rhododendrons (Azaleas)	....	.....	been much used for forcing, and they are extremely useful for that purpose, as has been so well demonstrated by the brilliant groups exhibited at various meetings of the Royal Horticultural Society by Messrs Cuthbert and other firms. When planting these hardy Azaleas, choose a sheltered position, not because they are tender, but to protect the flowers as much as possible from cold winds and late frosts. The majority of them are in bloom before the time of frosts has passed, and sometimes the flowers get destroyed wholesale. Few shrubs are more suitable for planting in woodland or on the fringe of walks in single groups, as here the colours are fully brought out. A peat soil or a mixture of loam and peat will provide quite suitable material. Mr. Anthony Waterer writes as follows: "In a general way all American plants may be said to delight in and to require what is called a peat soil; it was at one time believed they would not grow in any other. Experience, however, proves the contrary, and it is now found that Rhododendrons and Azaleas, which are the most important of that class, as well as any other of the more vigorous plants, succeed in almost any soil that does not contain lime or chalk. In many sandy loams they grow with as much luxuriance as they do in peat; in fact, almost any loamy soil, free from lime or chalk, may be rendered suitable for them by a liberal admixture of leaf mould or any fibrous material, such as parings of pasture lands. When the soil is poor, thoroughly decayed cow dung is one of the best manures for Azaleas." Seed pods should be picked off immediately the flowers are over.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron arborescens (Syn Azalea, arborescens)	Found by Pursh, and described in 1816 in his "Flora of North America." It is a native of the mountainous regions from Pennsylvania to South Carolina and Tennessee, especially about the lower portions of the mountains of North Carolina, where it is said to grow along the borders of streams. It attains a height of from 15 feet to 20 feet	White, tinged with rose, the stamens scarlet; occasionally the colour is rose	This has fragrant flowers, and grows about 9 feet in the British Isles.
R. calendulaceum (A. calendulacea)	Alleghany Forests. Introduced about 100 years ago.	Great range of colour; yellow, red, orange and other shades; May and June	It forms a large, handsome bush about 8 feet high, and is one of the most beautiful of the species.
R. flavum (Syn A. pontica)	Native of Caucasus, and has been grown for upwards of a century, viz., introduced in 1793	Yellow, fragrant; early Summer	Few Rhododendrons are better known; it grows from 6 feet to 8 feet, and has fairly large shining leaves. Excellent for forcing.
R. indicum (A. indica)	Widely distributed in the mountains of China and Japan	Various; early Summer	This is the plant regarded as the "common" Azalea. It has been improved considerably under cultivation, and there are several beautiful garden forms of it. The majority of these are unfortunately not hardy, and a few only can be planted outside with safety. About ten years ago Professor Sargent, of the Arnold Arboretum, collected seeds of this type in the mountains of Japan. The young plants have proved fairly hardy, but flower, as a rule, too early to be of any great garden value. The well-known Azalea amœna is the hardiest of the varieties; it is easily recognised by its reddish hose-in-hose

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Rhododendron indicum (A. indica)	Widely distributed in the mountains of China and Japan	Various; early Summer	flowers. Balsaminæflorum is dwarf, and suitable for the rock garden; it has pretty, double, rose-like salmon flowers. In many southern gardens R. indicum is hardy; we have seen borders of it in Mr. Leney's garden near Saltwood, Hythe, and of course in Devonshire and Cornwall.
R. ledifolium (A. ledifolia)	China and Japan	Pure white; March	This reminds one of the old white A. indica of gardens, but the leaves are more hairy, and it is hardier. It is like the preceding, and evergreen. It grows well out of doors in the Royal Gardens, Kew.
R. nudiflorum (A. nudiflora)	From Canada to Florida and Texas. On side of hills. Introduced in 1734	Pinkish as a rule; April and May	An extremely useful shrub, and has been of considerable service to the hybridist. It grows about 6 feet high, and makes a wide-spreading bush. It bears pinkish-coloured flowers, though many hues are to be found among its many forms.
R. occidentale (A. occidentalis)	California	White; late June	This species flowers later than most of the others, and, through using it as a parent, hybrids have been produced between it and the earlier flowering species, thus the flowering period is prolonged. It makes a good-sized bush, and blooms freely; the flowers are fragrant; the leaves are very glossy.
R. rhombicum (A. rhombica)	Japan	Rose-lilac; April	This is easily distinguished from other Rhododendrons by its rhomboid leaves and large flowers. In the seedling stage it is somewhat tender, and until several years old its growth is not satisfactory.
A. Vaseyi	Mountains of North Carolina	White suffused pink; April	Of the lesser known species this is one of the most beautiful, and should be in every collection. It makes a small bush here, though in its native country it grows more than 15 feet high, and is quite hardy in the Thames Valley. Album is a white variety,
R. viscosum (A. viscosa)	North America. In shady woods and swamps. Introduced in 1734.	White and sometimes pink; July	This does not usually flower until most of the others are over. It is readily recognised by its viscid leaves.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Rhodotypos kerrioides (White-flowered Kerria)	China and Japan; Rosaceæ	White; May and June	A very pretty shrub, 4 to 6 feet high, and bearing some resemblance to the popular Kerria japonica, hence it is often called the white-flowered Kerria, though it is really quite distinct. The white flowers are very much like those of a single Rose.
Ribes alpinum (Alpine Currant)	Northern Hemisphere; Saxifrageæ	Greenish	A beautiful group of flowering shrubs. R. alpinum is a dwarf bush 3 feet high, and has a golden-leaved form, which in the Spring is one of the prettiest of shrubs with this leaf colouring.
R. americanum	North America	Greenish	Has little claim to beauty, except the vivid autumn tints of the decaying foliage.
*R. aureum (Missouri Currant)	North America	Yellow; early May	A shrub 4 to 6 feet high, with drooping clusters of golden-yellow blossoms. It forms a good companion to the flowering Currant, Ribes sanguineum.
*R. gordonianum	Garden hybrid	Yellow and red	A hybrid between the species immediately preceding and the flowering Currant; it is in all respects about intermediate between the two.
R. multiflorum	Carpathian Mountains	Yellowish green	Grows 5 to 6 feet high, and is remarkable for the long, pendulous and graceful racemes of small yellowish blossoms
*R. sanguineum (Flowering Currant)	Western North America	Bright rosy red; April	A shrub 5 to 6 feet high, with bright coloured flowers. A deservedly popular shrub of easy culture. There are numerous varieties, all beautiful, viz.: album, nearly white; atrosanguineum, very deep coloured; florepleno, with double flowers; the last of all to bloom; glutinosum, pale rose; malvaceum, dense clusters of rosy-lilac flowers.
*R. speciosum (Fuchsia-flowered Gooseberry)	California	Deep scarlet; April and May	Shrub 6 to 8 feet, stems spiny, flowers very beautiful. A delightful wall plant, though quite hardy in south of England.
*Robinia hispida (Rose Acacia), (Syn Robinia rosea)	South United States; Leguminosæ	Purplish rose; June	From a flowering point of view this is the finest of all the Robinias. Though usually a small standard grafted on the common False Acacia, this is naturally a rambling shrub some 6 feet in height, with wide-spreading branches clothed with dark-green pin-

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Robinia hispida (Rose Acacia), (Syn. Robinia rosea)	South United States; Leguminosæ	Purplish rose; June	nate leaves, and about June the pendulous racemes of large showy blossoms are at their best. In this species the stiff hairs that clothe the young shoots and flower stalks are very noticeable, but there is a variety (inermis) in which they are entirely absent.
*R. neo-mexicana	Colorado and New Mexico	Rose	A small tree related to the common False Acacia, but it differs from that well-known tree; the chief differences are—the glaucous green of its prettily divided leaves, the bright rose tint of its flowers, and the hairy flower stalks and seed pods.
*R. Pseudacacia (Common Locust or False Acacia)	North America	White; late May and June	One of the handsomest of all hardy trees; the elegant pinnate foliage retained in all its freshness throughout the entire Summer, however hot and dry, renders it a delightful object during the whole of that time, and its beauty is considerably increased when the racemes of white flowers are fully open. In Winter, when bare, the deeply fissured bark, and its somewhat rugged aspect, are picturesque. There are many distinct varieties, chief among them being—aurea, in which the leaves are tinged with yellow; bella rosea, a smaller tree with rose-coloured flowers; bessoniana, a round-headed thornless form; decaisneana, with pretty rose-tinted blossoms; fastigiata, as upright as a Lombardy Poplar; inermis (Syn umbraculifera), a mop-headed small tree; pendula, of weeping growth; and semperflorens, which continues to flower throughout the growing season.
R. viscosa (Clammy Locust Tree), Syn R. glutinosa	North America	Pale rose; June and July	A small tree, easily known by the sticky glands that cover the new wood and leaf stalks. The leaves are larger than those of the others.
*Romneya Coulteri (Californian Poppy)	California (Papaveraceæ)	White, with golden stamens; Summer	Few flowers are more beautiful than those of the Californian Poppy. The flowers are so simple in form and delicate in substance. At first sight

CALIFORNIA POPPY. (*Romneya Coulteri.*)

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Romneya Coulteri (Californian Poppy)	California (Papaveraceæ)	White, with golden stamens; Summer	they remind one of the finest white crêpe, and flutter in the slightest breeze, their purity enhanced by the great golden boss of stamens from which they radiate. Many of the flowers are six inches and more in diameter, and when a dozen or more are open at one time, form a beautiful picture, whilst the fragrance is delicate. The plant, although flourishing in the south-west of England, is not absolutely safe there; several specimens were killed by the severe frost of a few winters ago. A certain amount of protection is desirable, but undue coddling often leads to the plant rotting to the root stock and so perishing. The Romneya is very impatient of root disturbance. When once established in the open ground, however, it grows strongly. The seeds take a long while to germinate. The plants may also be raised from root cuttings and layers. When growing in the rock-garden it often sends out shoots at some distance from the parent stem. Probably the best site for Romneya Coulteri is a sheltered one backed by a wall, which enables rough protection in the shape of a suspended mat or other material, to be more readily and temporarily supplied than when the plant stands altogether in the open. When in full growth the Romneya delights in plenty of water.
*Rubus biflorus (White-stemmed Bramble)	Himalaya; Rosaceæ	White	This Bramble forms an upright freely-branded specimen, 10 feet high, and has whitened stems, which, especially in winter, are very conspicuous.
*R. deliciosus (Rocky Mountain Bramble)	Rocky Mountains	White	A Currant-like shrub, with large white flowers (like single Roses) in great profusion. It is one of the finest flowering shrubs we have, has no spines, and is very graceful on the lawn, or may be grown against a wall.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Rubus fruticosus, flore-pleno (Double Pink Bramble), Syn R. bellidifolius	Garden form	Pink; late Summer	A double pink form of our common Bramble, and of a loose rambling nature, soon forming a tangled mass. The flowers consist of closely-packed petals like some of the double daisies, and the plant itself will thrive in dry sandy or stony soils.
R. laciniatus (Cut-leaved Bramble)	Garden origin	White	A strong-growing Bramble with elegantly cut leaves. It is essentially a plant for the wild garden, while the fruits are particularly good.
R. nutkanus (Nootka Sound Raspberry)	North America	White	A free upright species that pushes up annual shoots like the Raspberry, while the lobed leaves are decidedly ornamental. The large white blossoms are borne in May and June.
R. odoratus (Purple-flowered Raspberry)	North America	Rosy purple	Somewhat like the last, but with rosy-purple blossoms that are rather later in expanding than those of R. nutkanus. It thrives best in partial shade.
*R. phœnicolasius (Japanese Wine Berry)	Japan	Whitish	A strong-growing Raspberry-like plant, densely clothed with hairs. It is principally grown for its fruits, that are, when ripe, of a bright red tint, and appreciated by many. But this is a picturesque spreading shrub worth growing for its colouring and rambling growth alone. It is a good bank shrub, or to spread about over the rougher parts of the rock garden.
R. spectabilis (Salmon Berry)	North America	Purple; early May	A shrub so aggressive that it must go into the wild garden. It forms a dense tuft 6 feet high, and when laden with its drooping purple flowers is decidedly ornamental.
R. thyrsoideus flore-pleno (Double White Bramble)	Garden form	White	A semi-double white-flowered Bramble, less effective, however, than the double pink.
Sophora japonica	China; Leguminosæ	Creamy white panicles, which show up against the dark-green foliage	Excluding the plants formerly known as Edwardsia, now included in Sophora, this is the only well-known member of the genus, and it is the only one of our large-growing hardy trees that flowers in autumn. Regarded only from a foliage point of view, it forms a very handsome specimen, the elegant pinnate

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Sophora japonica	China	Creamy-white panicles, which show up against the dark-green foliage	leaves retaining their deep green tint long after most trees acquire their autumnal hue. Like many other Leguminosæ, the deep descending nature of its roots enables it to resist a long period of drought during the summer months better than most trees. It is very quick in growth, and is therefore valuable where rapid results are desired. The Sophora has been grown in this country for the last century and a half, and though in its early days considered to be rather tender, it has long proved to be thoroughly hardy. Varieties are not numerous, there being one, variegata, which is but a poor thing, while another, pendula, is one of the most striking of weeping trees. In winter the bright-green bark of this is a very noticeable feature.
Spartium junceum (Spanish Broom)	Europe; Leguminosæ	Golden yellow	Owing to the deeply-descending nature of their roots, many of the Leguminosæ resist drought better than the majority of shrubs. A case in point is furnished by the Spanish Broom, which in summer is laden with its large golden-yellow blossoms. Against a dark-tinted background it stands out conspicuously, while seen in a mass or clump it is particularly striking. The Spanish Broom ripens seeds freely, from which young plants can be readily raised, but as they make very few fibres and do not as a rule transplant well, they should be put into their permanent quarters while still young. The leaves are very few in number, their place being filled as in some of its allies by the young shoots, which are dark green and Rush-like. There is a double variety, flore-pleno.
*Spiræa arguta	Garden origin; S. multiflora and S. Thunbergi (Rosaceæ)	White; late April	One of the best of the shrubby Spiræas, forming a dense bush about 4 feet high, which towards the end of April is

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Spiræa arguta	.....	White; late April	profusely laden with clusters of pure white blossoms, despite frosts or cold winds, which play havoc with some of the early kinds.
S. bella	Nepaul	Deep pink May and June	A free-growing species, 5 feet high, with pretty flowers.
S. betulifolia (Syn S. splendens)	Europe	Clear cherry-pink; midsummer	A dwarf bush, 2 feet high, with pretty cherry-pink flowers.
S. brachybotrys (Syn S. luxuriosa)	Garden origin; S. canescens and S. Douglasi	Pale pink; June	A bold bush, 6 feet or more in height.
S. bracteata	Japan	White; May	Grows 5 or 6 feet high.
S. bullata (Syn S. crispifolia)	Japan	Rosy carmine; July	A dwarf species suitable for rockwork.
*S. canescens (Syn S. flagelliformis, Syn S. nepalensis, Syn S. rotundifolia)	Himalaya	White; June and July	The shoots of this are slender and arching so that it forms a graceful freely-branded shrub, some 5 to 8 feet in height. It is one of the best Spiræas.
*S. discolor (Syn S. ariæfolia)	North-West America	Creamy white; July	A well-known shrub, far better known, however, under the name of Spiræa ariæfolia. It reaches a height of 10 to 12 feet or even more, with plume-like clusters of creamy white blossoms. This is a shrub for the smallest garden.
*S. Douglasi	North America	Rosy red; July and August	Forms a crowded cluster of erect shoots 6 feet or so in height, with each shoot terminated by a dense spike of flowers. It succeeds best in damp soil.
S. hypericifolia	Europe	White	The slender arching shoots are clothed with clusters of pure white flowers in late May.
*S. japonica (Syn S. callosa)	Japan	Rosy carmine; June and July	Far better known under the name of S. callosa than that of japonica; it forms a shrub 5 or 6 feet high with brightly coloured flowers in flattened clusters. There are many distinct varieties, all good, the best being alba, a dwarf form with white flowers; Bumalda, also dwarf with pink blossoms; Anthony Waterer, the richest tinted of all dwarf kinds; superba, a deep tinted form of the type; and glabrata, with curiously broad leaves. Anthony Waterer is especially worth growing.

SPIRÆA CANESCENS.

FLOWERS OF SPIRÆA LINDLEYANA.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Spiræa lindleyana	Himalaya	White; August	Reaches a height of 10 to 12 feet, and is remarkable for its handsome pinnate leaves, while the large feathery flower panicles are very striking.
S. media (Syn S. confusa)	Europe	White; May	Forms a dense rounded bush from 5 to 8 feet high, and has clusters of pure white blossoms in profusion.
S. opulifolia (Nine Bark of the United States), (Syn Neillia opulifolia)	North America	Whitish	One of the largest of all the Spiræas, being of almost tree-like habit, but the flowers are not showy. There is a golden-leaved form (aurea) of dwarfer habit than the type, which is in the first half of the season very pretty.
*S. prunifolia flore-pleno	Japan	White; Spring	The flowers of this are quite double, like little rosettes, and in clusters along the arching shoots. Early in April as a rule they are very pretty.
S. salicifolia	Europe	Pinkish	A variable kind, more or less approaching S. Douglasi, but with light-tinted flowers.
S. sorbifolia	Northern Europe	White; July	A pinnate-leaved species somewhat in the way of S. lindleyana, but it does not grow more than half the height and flowers a month earlier.
S. Thunbergi	Japan	White; very early Spring	The first of all the Spiræas to bloom, but its beauty is often marred by inclement weather. It forms a dense mass of slender twigs clothed with tiny leaves.
S. Van Houttei	Garden form	White	A hybrid kind with pure white blossoms, which are as a rule more satisfactory under glass than in the open ground.
Staphylea colchica	Caucasus; Sapindaceæ	White; Spring	A sturdy upright deciduous shrub, 6 to 8 feet high, with drooping clusters of white flowers. Though decidedly ornamental it is as a rule more effective when flowered under glass than in the open ground. Needs a fairly moist loamy soil.
*S. pinnata (European Bladder-Nut)	Europe	Greenish white; Spring	A shrub from 8 to 10 feet high, which has bladder-like capsules in which the seeds are contained. The capsules are more attractive than the flowers themselves.
S. trifolia (American Bladder-Nut tree)	North America	Greenish white; Spring	In the way of the last, but a stronger grower, while the leaves are pinnate.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Stuartia pentagyna Syn (Malachodendron ovatum)	United States; Ternstroemiaceæ	White; July and August	In its native country this attains the dimensions of a small tree, but in England it is from 5 to 8 feet high. The flowers, somewhat suggestive of those of a single white Camellia, have the edges of the petals wavy, while the reddish stamens are very conspicuous. Though very beautiful, this is not a shrub for every garden, as it needs a cool moist soil with a fair proportion of peat, a remark that applies equally to the other members of the genus.
*S. Pseudo-camellia	Japan	White; with golden stamens; July and August	The finest of the Stuartias, bearing much general resemblance in foliage, flowers, and habit of growth to a Camellia, hence its specific name. The flowers are about 3 inches in diameter. Beside its other ornamental qualities the leaves die off in Autumn brilliantly tinted with crimson and gold, being in this respect much superior to its American relatives.
S. virginica (Syn Stuartia Malachodendron)	Southern United States	White; July and August	Much in the way of S. pentagyna, but forms a smaller and less vigorous bush, while the leaves are more hairy.
*Styrax japonicum (Japanese Storax)	China and Japan; Styraceæ	White; Midsummer	A shrub or small tree with flattened spreading branchlets, thickly studded on the undersides with drooping pure white fragrant Snowdrop-like blossoms. It is a delightful shrub, and best in a fairly moist light loam. Height 8 to 12 feet. Messrs. Veitch mention it is occasionally a low tree, 20 to 25 feet high, and in its wild state on the hillsides in central Japan it flowers in May. It has proved quite hardy.
S. Obassia	Japan	White	A very beautiful but rare species, forming a more sturdy bush than the last, while the pure white flowers are borne in drooping racemes. It succeeds under the same conditions as the preceding.
S. officinale	Levant	White	From 6 to 8 feet high, but more delicate in constitution than either of those above named. It needs the pro-

GROUPING OF LILACS (several varieties). THE BUSH IN THE CENTRE IS THE PERSIAN LILAC, SYRINGA PERSICA

STANDARD LILAC, MME. LEMOINE.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Styrax officinale	Levant	White	tection of a wall in many districts.
Syringa (lilac)	Oleaceæ	Various	A lovely family described elsewhere.
*Tamarix gallica (the Tamarisk)	Northern portion of the Old World; Tamariscineæ	Pink; May	A charming shrub, not half enough grown, owing, in some respects at least, to a wide-spread idea that it will not flourish away from the sea-coast. True, it luxuriates there, but it may be depended upon to thrive anywhere unless the soil is a stiff clay, chalky, or too much parched up in the summer. It is deciduous, but during the Summer the foliage is as delicate as any of the Conifers, and in May, when the branches are terminated by the waving plume-like panicles of pink blossoms, it is delightful. As a plant for the waterside it is most useful, and forms a pleasing picture if a score or so of plants are grouped on a lawn or open stretch of grass. In such a situation the long straggling shoots must be shortened back occasionally to keep the plants within bounds, as growing unchecked they will reach a height of 10 to 15 feet. There are several forms of Tamarisk, by some considered distinct species, and by others as forms of T. gallica, but a good deal of confusion prevails concerning them. One of the best (perhaps the very best Tamarisk) is that known as tetrandra or taurica, in which the feathery plumes are of a deeper pink than the type. Other names that occur are parviflora, chinensis, and japonica, but given tetrandra, as a rule no other is wanted.
T. germanica (German Tamarisk), (Syn Myricaria Germanica)	Europe	Pinkish	A smaller shrub than the last, more upright in growth, and with a glaucous tinge. The pinkish flowers are far less effective than those of the preceding.
*Ulex europæus (the Furze, Gorse, or Whin)	Europe; Leguminosæ	Yellow	The common Furze is known to every one, but its great beauty as a flowering shrub is apt to be overlooked, for

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Ulex europœus (the Furze, Gorse, or Whin)	Europe; Leguminosæ	Yellow	it luxuriates in dry, sandy, and stony soils, where little else will grow, and its golden blossoms are borne usually from February to May, though occasionally throughout the entire winter. The double-flowered variety—flore-pleno—is even more valuable from a flowering point of view than the type. Both transplant badly, hence the common kind is usually sown where it has to remain, and the double-flowered form struck from cuttings in a frame, and kept in pots till permanently planted.
*U. nanus (Dwarf Furze)	Europe	Yellow	Of dwarfer and denser habit than the common Furze, but its most prominent feature consists in the fact that it often commences to flower in August, and continues till Christmas, after which the common Furze asserts itself. The cultural items appended to the preceding species apply with equal force to this.
VERONICA.—There are a vast number of Veronicas, all natives of New Zealand, and garden forms raised from them, but many can only be regarded as hardy in the extreme west of England and Ireland, whereas some of the hardiest are from their diminutive growth suitable only for rockwork The best are—			
*Veronica Andersonii	Garden Origin (Scrophularineæ)	Purple; Summer and Autumn	A neat evergreen shrub with dense spikes of bluish-purple blossoms in great profusion for a long period. Near the sea, in especially favoured spots, it is delightful, while in other districts it forms a valuable subject for greenhouse or conservatory. Of the numerous other garden forms belonging to this section the following are all good: Blue Gem, light blue; Bolide, reddish; Celestial, sky blue, light centre; La Seduisante, rich reddish-purple; Marie Antoinette, pink; Purple Queen, rich purple; and Reine des Blanches, white.
V. hulkeana	New Zealand	Pale lavender; May and June	Very distinct; it has large terminal panicles of pale lavender flowers.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*V. Traversii	New Zealand	Pale mauve; June and July	The hardiest of all the shrubby Veronicas; it is a dense box-like bush, with a profusion of dense spikes of flowers. In the neighbourhood of London this is a thoroughly good shrub of easy culture.
Viburnum	Caprifoliaceæ	.....	The Viburnum family includes several beautiful shrubs, and of the thirty or forty species and varieties in cultivation at least six are indispensable, *i.e.* no good shrub garden is without them. Most of them are vigorous in growth and easily propagated; they like a fairly rich soil and moisture at the root. Several of the American species grow naturally in damp, more or less shady woodlands. Taken collectively the Viburnums possess a variety of attractions. Some species are evergreen, and thus useful Winter plants; others are amongst the most beautiful shrubs for their flowers, others again, like our native Guelder Rose (V. Opulus), have showy fruits; finally the foliage of several of the deciduous species dies off rich red or yellow tints.
V. dentatum (Arrow-wood)	North America. Introduced in 1763	White; June and July	The American Viburnums are not apparently so valuable in the British Isles as in their native country. Most of them are handsome vigorous bushes, but without the same flower attractions as plicatum, macrocephalum, and the Guelder Rose (V. Opulus var sterile). Many of them, however, bear very showy fruits in their own country, and the leaves turn to beautiful Autumn tints. V. dentatum is deciduous, free-growing, leaves bright green, deeply toothed and strongly veined. The trusses are 3 inches to 4 inches across, the flowers white, and fertile. It is one of the handsomest as regards flowers of the American Viburnums. The dark-blue fruit ripens neither abundantly nor regularly in England.

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Viburnum Lantana (Wayfaring tree)	Britain, also Europe, North and Western Asia, and N. Africa	White; May and June	A beautiful native shrub. Its chief beauty is in the colour of the flowers and the gorgeous Autumn leaf tints. Groups of this are pictures of colour in Autumn. The fruit, at first black and afterwards red, soon disappears before the birds. The tree grows rapidly and generally attains a height of about 12 or 15 feet; the leaves are large and downy. The way-faring tree should be more planted in English gardens. It will grow almost anywhere. There are two variegated-leaved varieties, but these we know little about, and we care more for the type than any golden variegation.
V. macrocephalum	China and Japan. Introduced from China in 1844 by Fortune	Pure white	This must be included, but it is not very hardy. Mr. Bean, writing of it in *The Garden*, November 17, 1900, p. 361, says: "The shrub known under this name is a cultivated form of a Chinese species, in which all the flowers have, under artificial influences, become sterile. The wild plant to which it belongs is also in cultivation, and is known as V. Keteleeri. In this type plant the middle of the truss is piled with perfect flowers, the edges only being occupied with the large and showy sterile ones. V. macrocephalum is by far the most striking plant, its large, rounded or pyramidal trusses of pure white flowers being unequalled among the Viburnums. The plant is, however, better adapted for growing in pots for greenhouse decoration or as a wall plant than it is as a shrub in the open. In my experience it is scarcely hardy enough to assume its best character without some sort of protection. Although hard winters may not kill it outright they seriously cripple it. It is only in recent years that it has attained popularity, but it has long been known."

VIBURNUM MACROCEPHALUM

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
V. Opulus (the Guelder Rose) It is called in America the Cranberry bush or High Cranberry	Britain, Europe and Northern hemisphere	White; May and June	Of the two species of Viburnum this is the better known, and is the more valuable as a garden shrub. It grows to a height of from 10 to 15 feet, and is easily known by the beautiful lobed Maple-like leaves, which die off brilliant crimson shades. Sterile as well as fertile flowers are produced on each truss, the flowers being white and three-quarters of an inch across. But the wild Guelder Rose is in its fullest beauty in Autumn when the fruits change to brilliant red, and the leaves gradually assume their gorgeous colouring. As this species appreciates moisture it is a noble shrub to make groups of in moist places, such as by stream, pond, river, or moist margin. The beauty of the wild Guelder Rose is not realised by many planters of gardens. Its colouring is intense. In the "Cyclopedia of American Horticulture" it is mentioned: "Handsome native shrub, very decorative in fruit, which begins to colour by the end of July, remains on the branches, and keeps its bright scarlet colour until the following Spring. The berries are not eaten by birds."
V. O. sterile (Snowball tree)	Variety. Origin unknown	White; early June	This is too well known to need description. It is a graceful shrub, its branches bent with the weight of the rounded flower trusses. As in the case of V. macrocephalum and of V. plicatum the small and insignificant fertile flowers have become transformed by cultivation into large barren ones, and the truss also loses its flattened shape and becomes rounded or conical. It appreciates a somewhat moist soil, and is best seen by itself, unfettered by neighbouring twigs. It is not a shrub to crush into the common shrubbery.
V. tomentosum Mariesi	Japan	Cream white	A very graceful shrub but little known. The sterile flowers

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
Viburnum tomentosum Mariesi	Japan	Cream white	are on the outer edge of the flat cymes, and line the spreading shoots. We hope it will soon be plentiful.
V. tomentosum var plicatum	Japan. Introduced by Fortune in 1844	Ivory white	We have used the word tomentosum as plicatum is a variety of that species. V. tomentosum itself is a handsome shrub with big, flattish cymes and creamy-white sterile flowers round the margin of the truss. That known as V. plicatum, a sterile form of V. tomentosum, is a beautiful shrub; the most precious perhaps of the whole family. It makes a glorious group on the lawn, and in early June the spreading shoots are so thickly covered with flower clusters that scarcely a vestige of the dark-green, wrinkled leafage is visible. It is quite hardy, but in the north it will be wise to choose a sheltered position for it. As a wall shrub too it is valuable, and a specimen on a wall in the Royal Horticultural Society's gardens at Chiswick is quite a mass of bloom every year. Passers by who know not the shrub wonder what it is making so thick a mantle of white. It grows 4 to 5 feet high in the British Isles, taller in its native country; the trusses of flowers are erect on short branches, and each measure about 3 inches across. Being in pairs they make a striking double row on every branch. V. plicatum must come into the smallest list of flowering shrubs.
V. Tinus	South of Europe and North of Africa. Introduced in 1596	White; flowers in Winter in the south, but much depends upon locality	This is a well-known evergreen shrub, and quite hardy in the south of these Isles, where it is planted as a hedge. Even when out of flower the bush has a certain beauty owing to its shining green leaves. Near London it succeeds. Many things considered hardier get severely injured when the Laurustinus escapes. North and easterly winds are harmful to it. There are several varieties. Lucidum

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
V. Tinus	South of Europe and North of Africa. Introduced in 1596	White; flowers in Winter in the south, but much depends upon locality	is the finest; the leaves and corymbs are larger than those of the type, the former being of a very glossy green and smooth. In lucidum the leaves and branches are woolly, whilst there are also purpureum, with purplish leaves, and a variegated variety, but neither is of value.
* Diervilla florida (Syn Weigela amabilis, W. rosea	Japan; Caprifoliaceæ	Rose; Summer	A beautiful free-growing, free-flowering shrub, that will hold its own almost anywhere. Its flowering time is in May or early June, but occasionally there is an Autumn display. Beside the original species there are many garden varieties, all of which are beautiful, but there are so many that a selection is necessary. Three of the best are: *candida, white; *Abel Carrière, bright rose; and *Eva Rathke, claret crimson, which lasts in flower more or less from May till the end of the Summer. Other good varieties are: Dr. Baillon, red; Grœnewegenii, rose and white; hortensis nivea, white, spreading habit; Looymansi aurea, golden leaves; præcox, rose, earlier than any of the others; and P. Durchartre, purplish red. In any selection of flowering shrubs some of the Weigelas must certainly have a place.
W. middendorfiana	Siberia	Yellowish	Remarkable among Weigelas for its distinct yellow flowers. Though pretty in itself, it is likely to prove of more value in the production of new varieties by crossing it with the older kinds.
*Xanthoceras sorbifolia	North China	White; stained with red in the centre; Spring	A beautiful tree, but seldom seen in English gardens. The following note appeared in *The Garden* about it: "This tree does not appear to be widely grown, and I have heard doubts expressed as to its being hardy enough to stand the winter in some districts. Not long ago I saw a fine specimen in a Kentish rectory garden. The tree is 5 feet or 6 feet high,

NAME.	COUNTRY OR ORIGIN AND NATURAL ORDER.	COLOUR AND SEASON.	GENERAL REMARKS.
*Xanthoceras sorbifolia	North China	White; stained with red in the centre; Spring	and under the shelter of a thick hedge of Laurustinus it flowers freely every year, and also produces fruit. The long white and slightly tinted blooms, which change to purple, are very effective, but one rarely gets an opportunity of seeing this interesting tree in flower. Perhaps this is because it does not belong to the common order of things, or else it is not accommodating enough for general culture, but it is very beautiful." The Xanthoceras is sometimes trained against a wall, but its growth is too stiff for the purpose. The flowers are in dense spikes about 6 inches long, reminding one of the Horse-chestnut, and are an inch across individually. The foliage is very ornamental, and each leaf-stalk has seven pinnate, serrated, bright-green leaves. Apt to get spoilt by frost, however.
Yuccas	Liliaceæ		See pages 137, 234.

YUCCA GLORIOSA IN A SURREY GARDEN. (*Height* 15 *feet.*)

YUCCA FILAMENTOSA var. *FLACCIDA* RIGHTLY PLATE D

HARDY TREES AND SHRUBS FOR BEAUTY OF FOLIAGE AND GROWTH

THE following is a table of hardy trees and shrubs more interesting for the beauty of their foliage and growth than for their flowers, with their popular names, approximate heights, native country, and other particulars. All are deciduous unless otherwise specified. Those with an asterisk (*) are the most important. Some groups such as the Vitis, will be found elsewhere.

LATIN NAME.	CHARACTER AND HEIGHT.	REMARKS.	NATIVE COUNTRY.
Acanthopanax ricinifolium	Tree 50 ft.	Suitable for South and West of England, needs a good loamy soil	Japan
,, spinosum	Shrub 8 ft.	For sheltered spots in South	,,
Acer argutum	Tree 20 ft.	In ordinary soil and position	,,
,, campestre (Field Maple)	Tree 30 ft.	Will grow in dry spots	Europe and Western Asia
,, ,, variegatum	Tree 20 ft.	If too much exposed the variegated leaves suffer	Garden form
,, carpinifolium	Tree 30 ft.	In ordinary soil and position	Japan
,, caudatum (Syn A. acuminatum)	Tree 20 ft.	Handsome leaves but rather tender	Himalaya
,, circinatum	Tree 30 to 40 ft.	Needs a sheltered spot	California
,, cissifolium (Syn Negundo cissifolium	Small tree 10 ft.	In ordinary soil and position	Japan
,, cratægifolium	Tree 15 ft.	,, ,, ,,	,,
,, creticum (Syn A. parvifolium), (Cretan Maple)	Tree 25 ft.	,, ,, ,,	Asia Minor
* ,, dasycarpum (Syn A. eriocarpum), (White Maple)	Tree 50 ft.	Soil must not be too dry	North America
* ,, dasycarpum laciniatum	Tree 50 ft.	Forms a very pretty lawn tree; soil must not be too dry	,,
,, diabolicum (Syn A. pulchrum)	Tree 25 ft.	In ordinary soil and position	Japan
* ,, distylum	Tree 15 ft.	Very handsome leaves, 5 to 7 in. long, 4 in. broad; in ordinary soil and position	Japan, Nippon
,, glabrum (Syn A. tripartitum)	Tree 30 ft.	In ordinary soil and position	Western North America
,, Heldreichi	Tree 25 ft.	,, ,, ,,	Eastern Europe
,, hyrcanum (Syns A. caucasicum and A. lobatum	Tree 20 ft.	,, ,, ,,	Caucasus
* ,, japonicum (Syn A. palmatum macrophyllum), (Japanese Maple)	Tree 10 to 15 ft.	Requires protection from cold winds in spring. Very slow in growth	Japan
* ,, japonicum aureum (Golden-leaved Japanese Maple)	,,	,, ,, ,, ,,	,,
,, Lobelii (Syn A. platanoides (Lobelii)	Tree 50 ft.	In ordinary soil and position	Southern Italy
,, macrophyllum (Syn A. speciosum)	Tree 70 ft.	,, ,, ,,	North-West America
,, monspessulanum	Tree 30 ft.	,, ,, ,,	South of Europe
,, Negundo (Syn Negundo aceroides)	Tree 40 ft.	,, ,, ,,	North America
,, ,, californicum	Tree 30 ft.	,, ,, ,,	California
* ,, ,, variegatum (Variegated Maple)	,,	A well-known variegated tree that must be sparingly planted	Garden form
,, ,, aureum	,,	A very distinct tree, yellow variegation	.....

,, opulifolium (Syn A. Opalus), (Italian Maple)	Small tree 12 ft.	In ordinary soil and position	Corsica
* ,, palmatum (Syn A. polymorphum)	Tree 10 to 15 ft.	Requires protection from cold winds in spring. Slow in growth, but the coloured-leaved varieties are very showy and often brilliant	Japan
,, ,, and many varieties	,,	,,	,,
,, pennsylvanicum (Syn A. striatum)	Tree 30 ft.	A fairly moist spot is best for this; its striped bark is very striking	North America
,, pictum	Tree 50 ft.	In ordinary soil and position	Japan
,, platanoides	,,	,, ,, ,,	Norway and Sweden
,, ,, laciniatum	,,	,, ,, ,,	Garden form
,, ,, palmatum	,,	,, ,, ,,	,,
,, ,, purpureum (Purple-leaved Maple)	,,	,, ,, ,,	,,
* ,, ,, Schwedleri	,,	The young leaves of this are red, and when growing freely it is very striking	,,
,, Pseudo-platanus (Sycamore)	Tree 50 to 70 ft.	In ordinary soil and position	Europe
* ,, ,, ,, Leopoldi	Tree 50 ft.	,, ,, ,,	Garden form
,, ,, ,, purpureum	,,	,, ,, ,,	,,
,, ,, ,, and other varieties	Trees 20 to 50 ft.	,, ,, ,,	,,
,, rubrum (Syn A. coccineum), (Scarlet Maple)	Tree 60 ft.	Needs a fairly moist soil somewhat sheltered	North America
,, saccharinum (Sugar Maple)	,,	In ordinary soil and position	,,
,, spicatum (Syn A. rugosum)	Tree 20 ft.	,, ,, ,,	,,
,, tataricum	Tree 30 ft.	,, ,, ,,	Tartary
* ,, ,, Ginnala	Tree 20 ft.	The brilliant colour of its leaves in autumn attracts attention to this; in ordinary soil and position	Japan
*Ailantus glandulosa	Tree 60 ft.	Good town tree, and for dry soils, and of quick growth	China
Alnus cordifolia	Tree 20 ft.	Thrives in dryer soil than most Alders	South of Europe
,, firma (Syn A. multinervis)	Tree 30 ft.	Needs a moist spot	Japan
,, glutinosa (Common Alder)	Tree 40 to 60 ft.	Grows well in boggy places	Europe and North Africa
* ,, ,, aurea (Golden-leaved Alder)	Tree 30 ft.	,, ,, ,,	Garden form
* ,, ,, imperialis	Tree 50 ft.	,, ,, ,,	,,
,, ,, and other varieties	Trees 30 to 60 ft.	,, ,, ,,	,,
,, ,, incana	Tree 50 to 70 ft.	,, ,, ,,	Northern temperate regions
,, ,, and varieties	,,	,, ,, ,,	.....
,, japonica (Japanese Alder)	Tree 30 ft.	,, ,, ,,	Japan
,, oregona	Tree 20 ft.	Moist soil	Western North America

Latin Name.	Character and Height.	Remarks.	Native Country.
Alnus orientalis	Tree 25 ft.	Moist soil	Orient
,, rhombifolia	Tree 20 ft.	,,	California
,, serrulata	Shrub 8 to 10 ft.	,,	North America
,, ,, viridis	Shrub 6 ft.	Does well in exposed position	Northern Europe and Asia
Aristotelia Macqui	Sub-evergreen shrub 6 ft.	Rather tender, will grow in ordinary soil	Chili
,, ,, variegata	,,	,, ,, ,, ,,	.....
Artemesia Abrotanum (Southernwood)	Shrub 3 to 4 ft.	Very fragrant leaves; will grow in dry soils	South of Europe
*Arundinaria Veitchii	Evergreen 2 to 3 ft.	Needs good, fairly moist soil, and protection from cutting winds	Japan
Arundo Donax (Giant Reed)	Evergreen 10 ft.	Hardy in South of England, needs protection in North, moist soil	Mediterranean region
,, ,, variegata	,,	,, ,, ,, ,,	Garden form
Atraphaxis buxifolia	Shrub 2 ft.	Well drained, sandy peat, fairly moist	Caucasus
,, lanceolata	,,	,, ,, ,, ,,	Temperate Asia
,, Muschketowi	,,	,, ,, ,, ,,	Central Asia
,, spinosa	Sub-evergreen Shrub 2 ft.	,, ,, ,, ,,	Orient
Atriplex canescens	Shrub 3 ft.	Will grow in dry, sandy soils, and also near the sea	Western North America
,, confertifolia	Shrub 1 ft.	Fairly moist peaty soil	Western United States
,, Halimus (Tree Parslane)	Shrub 6 ft.	Will grow in dry sandy soils and also near the sea	Europe
,, Nuttallii	Shrub 3 ft.	,, ,, ,, ,,	Western North America
,, portulacoides	Shrub 2 ft.	,, ,, ,, ,,	Europe
Azara dentata	Evergreen shrub 12 ft.	Ordinary soil, but thoroughly hardy only in South and West of England	Chili
,, Gilliesii	Evergreen shrub 15 ft.	,, ,, ,, ,,	,,
,, integrifolia	,,	,, ,, ,, ,,	,,
,, microphylla	Evergreen shrub 12 ft.	,, ,, ,, ,,	,,
Baccharis halimifolia	Shrub 6 to 8 ft.	Useful for dry sandy soils	North America
,, patagonica	Shrub 4 ft.	,, ,, ,,	Patagonia
,, salicifolia	Shrub 6 ft.	,, ,, ,,	Southern United States
Berchemia racemosa	Climbing shrub 15 ft.	Deep moist soil and sheltered spot	Japan
,, volubilis (Syn Rhamnus volubilis)	Climbing shrub 20 ft.	,, ,, ,,	Southern United States

*Betula alba (Syn B. verrucosa), (Silver Birch)	Tree 50 to 60 ft.	Will grow in bleak cold spots, but is beautiful everywhere	Northern Hemisphere
* ,, ,, fastigiata	Tree 30 ft.	Extremely distinct upright growth	Garden form
* ,, ,, laciniata (Cut-leaved Birch)	Tree 50 ft.	A charming lawn tree	,,
* ,, ,, pendula (Weeping Birch)	Drooping tree	A weeping form	,,
* ,, ,, purpurea (Purple-leaved Birch)	Tree 40 ft.	An effective coloured-leaved tree	,,
,, corylifolia (Hazel-leaved Birch)	Tree 50 ft.	Grows well in ordinary soil and position	Japan
,, davurica	Tree 30 to 40 ft.	,, ,, ,, ,,	Northern Asia and America
,, fruticosa	Shrub 6 ft.	,, ,, ,, ,,	Northern Asia
,, lenta (Syn B. carpinifolia)	Tree 60 to 70 ft.	,, ,, ,, ,,	North America
,, lutea (Syn B. excelsa), (Yellow Birch)	Tree 70 to 80 ft.	,, ,, ,, ,,	,,
* ,, Maximowiczii	Tree 30 ft.	Much larger leaves than any other Birch; very satisfactory with Messrs. Veitch at Coombe Wood	Japan
,, ,, nana (Dwarf Birch)	Shrub 1 to 3 ft.	Grows well in ordinary soil and position	Northern Hemisphere
* ,, nigra (Syn B. rubra), (Red Birch)	Tree 60 to 70 ft.	Does best in moist soil	North America
,, occidentalis	Shrub 8 to 10 ft.	Grows well in ordinary soil and position	Western North America
* ,, papyrifera (Syn B. papyracea), (Canoe Birch)	Tree 60 to 70 ft.	Prefers moist spots	North America
,, populifolia	Tree 30 ft.	,, ,,	,,
,, pumila	Shrub 2 to 3 ft.	,, ,,	,,
,, utilis (Syn B. Bhojpattra), (Indian Birch)	Tree 50 ft.	Rather tender except in South and West	Himalaya
Bigelovia Douglasii	Shrub 4 ft.	Will grow in poor sandy soils	North America
,, graveolens	Shrub 3 ft.	,, ,, ,,	,,
Broussonetia Kæmpferi	Tree 15 ft.	Sometimes cut by frost, but quickly recovers	Japan
,, papyrifera (Syn Morus papyrifera), (Paper Mulberry)	Tree 20 ft.	,, ,, ,,	China, Japan, and Polynesia
Bumelia lanuginosa (Syn. Sideroxylon lanuginosum)	Shrub 10 ft.	Needs good, fairly moist soil, and a sheltered spot	Southern United States
,, lycioides (Syn. Sideroxylon lycioides)	Sub-evergreen shrub 8 ft.	,, ,, ,,	,,
Callicarpa americana	Shrub 6 ft.	Rather tender; likes moist soil	North America
,, japonica	Shrnb 5 ft.	,, ,,	Japan
Carpinus caroliniana (Syn C. americana), (American Hornbeam)	Tree 50 ft.	Any ordinary soil and position	North America
* , Betulus (Common Hornbeam)	Tree 50 to 60 ft.	Any ordinary soil and position, good for Hedges	Europe
,, cordata	Tree 40 ft.	Any ordinary soil and position	Japan
,, japonica (Japanese Hornbeam)	Tree 15 ft.	,, ,, ,,	,,

Latin Name	Character and Height.	Remarks.	Native Country.
*Carya alba (Syn Hicoria ovata), (Shell Bark Hickory)	Tree 50 to 70 ft.	Needs good loamy soil, very impatient of removal	North America
* ,, olivæformis (Syn Hicoria Peccan), (Peccan Nut)	Tree 30 ft.	,, ,, ,, ,,	,,
Castanea pumila	Tree 12 ft.	Does best on light loamy soils	United States
* ,, sativa (Syn C. vesca), (Sweet Chestnut)	Tree 60 to 70 ft.	,, ,, ,,	Europe and North Africa
,, ,, and varieties	Trees 20 to 50 ft.	,, ,, ,,	Garden forms
*Castanopsis chrysophylla (Syn Castanea chrysophylla), (Golden chestnut)	Evergreen Shrub 6 ft.	Needs shelter from cold cutting winds	California
Cedrela chinensis (Syn Ailantus flavescens)	Tree 30 ft.	Hardy in South of England	China
*Celastrus articulatus	Climbing shrub 20 ft.	Useful for rambling over unsightly objects, ordinary soil	Japan
,, scandens	,,	,, ,, ,, ,,	North America
Celtis australis (Nettle tree)	Tree 30 to 40 ft.	Ordinary soil and position	Mediterranean region
,, japonica (Japanese Nettle tree)	Tree 30 ft.	,, ,, ,,	Japan
,, mississippiensis	Tree 40 to 50 ft.	,, ,, ,,	Southern United States
,, occidentalis	,,	,, ,, ,,	North America
,, Tournefortii (Syn C. orientalis)	Tree 15 ft.	,, ,, ,,	Orient
Cephalanthus occidentalis	Shrub 6 ft.	Moist peaty soil with plenty of sand	North America
Cercidophyllum japonicum	Tree 20 to 30 ft.	Hardy in the South, rather tender elsewhere	Japan
Cleyera ochnacea (Syn C. japonica)	Evergreen shrub 6 ft.	Does best treated as a wall plant in good soil	,,
Cocculus carolinus	Twining shrub 20 ft.	Will grow in warm dry spots	North America
,, laurifolius	Shrub 5 ft.	Needs protection of a wall	Himalaya to Japan
Colletia cruciata	Shrub 6 ft.	Rather tender in North of England	Uruguay
,, ferox (Syn C. spinosa, C. horrida)	,,	,, ,, ,,	,,
Coriaria myrtifolia	Shrub 5 ft.	A deep light soil suits this best	Mediterranean Region
Cornus alba	Shrub 6 ft.	Ordinary soil and position	North America
* ,, ,, sibirica (Siberian Dogwood)	Shrub 5 ft.	,, ,, ,,	Siberia
* ,, ,, Spaethii	Shrub 6 ft.	,, ,, ,,	Garden form
,, alternifolia	Shrub 10 ft.	,, ,, ,,	North America
,, Amomum	Shrub 6 ft.	Does best in damp spots	,,
,, Baileyi	,,	Ordinary soil and position	,,
,, circinata	Shrub 5 ft.	Does best in damp spots	,,

	,, florida	Shrub 10 ft.	Our summers are rarely hot enough to flower this well. Pendula is a beautiful weeping variety. A delightful shrub whose large white blossoms are borne in June	Eastern North America
*	,, Kousa (Syn Benthamia japonica), (Japanese Strawberry tree)	Shrub 8 to 10 ft.	Hardy, grows slowly when young. Flowers delightfully when established. Should be in other list.	Japan
	,, macrophylla. (Beautiful at Coombe Wood)	Tree 40 ft.	Deep fairly moist soil. A handsome tree	Northern India to Japan
	,, Mas (Cornelian Cherry)	Small tree 15 ft.	Ordinary soil and position	Europe
	,, officinalis	Small tree 10 to 15 ft.	,, ,, ,,	Japan
	,, pubescens	Shrub 6 ft.	,, ,, ,,	North America
	,, sanguinea (Common Dogwood)	,,	,, ,, ,,	Europe and North Asia
	,, stolonifera (Red Osier Dogwood)	Shrub 6 to 8 ft.	,, ,, ,,	North America
	Corylus americana (American Hazel)	Shrub 5 to 8 ft.	,, ,, ,,	,,
*	,, Avellana (Common Hazel)	Tree or shrub 20 ft.	,, ,, ,,	Europe and Asia
	,, ,, and varieties	Trees or shrubs	,, ,, ,,	Garden forms
*	,, Colurna (Constantinople Hazel)	Tree 40 to 50 ft.	,, ,, ,,	South-Eastern Europe to Himalaya
	,, heterophylla	Tree or shrub 15 ft.	,, ,, ,,	Japan
	,, mandshurica (Japanese Hazel)	Small tree 20 ft.	,, ,, ,,	Amurland and Japan
	,, maxima (Cob Nut)	Tree or shrub 20 ft.	,, ,, ,,	South Europe
	,, rostrata (Beaked Hazel)	Shrub 5 ft.	,, ,, ,,	North America
	*Danæ Laurus (Syn Ruscus racemosus), (Alexandrian laurel)	Evergreen shrub 4 ft.	Grows well in shady spots	Asia Minor
	Decumaria barbara	Climbing shrub 10 ft.	Needs a warm sheltered border	Southern United States
	Drimys aromatica (Tasmanian Pepper plant)	Evergreen shrub 10 ft.	Hardy only in South and West	Tasmania
	,, Winteri (Winter's Bark)	Evergreen shrub 20 ft.	,, ,, ,,	South America
	*Elæagnus angustifolia (Syn E. hortensis), (Wild Olive)	Tree 20 ft.	Will grow in dry sandy soils	Mediterranean region
	,, argentea (Syn Shepherdia argentea), (Silver Berry)	Shrub 5 ft.	Needs a fairly moist soil	North America
*	,, glabra	Evergreen shrub 6 ft.	Ordinary soil not too dry	China and Japan
*	,, macrophylla	,,	,, ,, ,,	,,
*	,, multiflora (Syn E. edulis, E. longipes)	Deciduous shrub 8 ft.	,, ,, ,,	,,
	,, orientalis	Tree 20 ft.	Will grow in dry sandy soils	Orient
*	,, pungens (Syn E. reflexa)	Evergreen shrub 6 to 8 ft.	One of our finest evergreens	China and Japan
*	,, ,, and varieties	,,	Will do well in ordinary soil	Garden forms

LATIN NAME.	CHARACTER AND HEIGHT.	REMARKS.	NATIVE COUNTRY.
Elæagnus umbellata (Syn E. japonica)	Sub-evergreen shrub 8 ft.	Will do well in ordinary soil	Japan
Empetrum nigrum (Crowberry)	Evergreen shrub 1 ft.	Needs moist peaty soil	Britain
Ephedra americana	Evergreen shrub 3 ft.	Does well in dry stony places	Chili
,, distachya	Evergreen shrub 3 to 4 ft.	,, ,, ,,	Europe and Asia Minor
,, gerardiana	Evergreen shrub 2 ft.	Rather tender	Himalaya
,, helvetica	Evergreen shrub 2 ft.	Does well in dry stony places	South Europe
,, trifurca	Evergreen shrub 3 ft.	,, ,, ,,	Western North America
Ercilla volubilis (Syn E. spicata)	Evergreen twiner 15 ft.	Needs protection of a wall in most districts	Chili
Eriobotrya japonica (Syn Photinia japonica), (Loquat), handsome leaves	Evergreen tree 20 ft.	,, ,, ,, ,,	China and Japan
Eurya japonica	Evergreen shrub 6 ft.	Hardy only in south and west	India, China, and Japan
Fagus ferruginea (Syn F. americana), (American beech)	Tree 40 to 60 ft.	Ordinary soil and position	North America
* ,, sylvatica (Common Beech)	Tree 60 to 100 ft.	,, ,, ,,	Europe and Asia Minor
* ,, ,, atropurpurea (Purple-leaved Beech)	Tree 50 ft.	Best dark-leaved form	Garden form
* ,, ,, cuprea (Copper Beech)	,,	Ordinary soil and position	,,
,, ,, heterophylla	,,	,, ,, ,,	,,
* ,, ,, pendula (Weeping Beech)	Tree, height various	,, ,, ,,	,,
* ,, ,, purpurea pendula	,,	,, ,, ,,	,,
,, ,, and other varieties	,,	,, ,, ,,	Garden forms
*Fatsia japonica (Syn Aralia japonica)	Evergreen shrub 3 to 5 feet	Needs sheltered spot, cool moist soil	Japan
*Ficus Carica (Common Fig)	Tree or shrub 15 to 20 ft.	Does best on wall, good town plant	Afghanistan and Eastern Persia
Fraxinus americana (White Ash)	Tree 30 to 40 ft.	Ordinary soil and position	North America
,, augustifolia	Tree 30 to 50 ft.	,, ,, ,,	Southern Europe
,, anomala	Tree 12 ft.	Needs sheltered spot	Utah
,, caroliniana (Water Ash)	Tree 30 to 50 ft.	Ordinary soil and position	United States
,, chinensis (Chinese Ash)	Tree 25 ft.	,, ,, ,,	China
* ,, excelsior (Common Ash)	Tree 30 to 80 ft.	,, ,, ,,	Europe
* ,, ,, aurea	Tree 50 ft.	,, ,, ,,	Garden form
,, ,, aurea pendula (Weeping Golden Ash)	Tree, height various	,, ,, ,,	,,
,, ,, crispa	Tree 30 ft.	,, ,, ,,	,,

,, ,, heterophylla (Syn monophylla)	Tree 50 ft.	,, ,, ,,	,,
* ,, ,, pendula (Weeping Ash)	Tree, height various	,, ,, ,,	,,
,, ,, and other varieties	Trees, height various	,, ,, ,,	Garden forms
,, mandshurica	Tree 70 to 80 ft.	,, ,, ,,	Mandchuria and Japan
,, nigra (Syn F. sambucifolia)	Tree 50 ft.	,, ,, ,,	North America
,, numidica	Tree 30 ft.	,, ,, ,,	North Africa
,, oregona (Syn F. californica) (Oregon Ash)	Tree 50 ft.	,, ,, ,,	Western United States
* ,, parvifolia (Syn F. lentiscifolia)	Tree 30 to 50 ft.	,, ,, ,,	South Europe
,, ,, pendula	Tree, height various	,, ,, ,,	Garden form
,, pennsylvanica (Syn F. pubescens)	Tree 30 ft.	,, ,, ,,	North America
,, potamophila (Swamp Ash)	,,	,, ,, ,,	Turkestan
,, quadrangulata (Blue Ash)	Tree 60 to 70 ft.	,, ,, ,,	United States
Gleditschia australis	Tree 30 ft.	,, ,, ,,	Southern China
,, japonica (Japanese Locust)	Tree 50 ft.	,, ,, ,,	Japan
,, monosperma (Water Locust)	Tree 60 ft.	,, ,, ,,	Southern United States
,, sinensis (Syn G. ferox, G. horrida)	Tree 30 ft.	,, ,, ,,	China
,, triacanthos (Honey Locust)	Tree 60 ft.	,, ,, ,,	Eastern United States
Griselinia littoralis	Evergreen tree or shrub 20 ft.	Hardy only in South and West of England	New Zealand
,, lucida	Evergreen tree 15 ft.	,, ,, ,,	,,
Gymnocladus canadensis (Kentucky Coffee Tree)	Tree 50 ft.	Needs good deep soil	North America
,, chinensis	Tree 25 ft.	,, ,,	China
Hymenanthera crassifolia	Shrub 3 ft.	Succeeds in fairly moist peaty soil	New Zealand
Idesia polycarpa	Tree 20 ft.	Deep open loam, shelter from strong winds	Japan
Ilex ambigua (Syn Prinos ambigua)	Shrub 4 to 5 ft.	Ordinary soil and position	Southern United States
,, Amelanchier (Syn Prinos lanceolata)	Shrub 6 to 8 ft.	,, ,, ,,	North America
,, Aquifolium (Common Holly)	Evergreen tree 10 to 40 ft.	,, ,, ,,	Europe
,, ,, angustifolium (Narrow-leaved Holly)	Evergreen tree or shrub	,, ,, ,,	Garden form
,, ,, argenteo marginata (Silver Variegated Holly)	,,	,, ,, ,,	,,
* ,, ,, argenteo pendula (Weeping Silver Holly)	,,	,, ,, ,,	,,
* ,, ,, aureo marginata (Golden Holly)	,,	,, ,, ,,	,,
,, ,, ferox (Hedgehog Holly)	,,	,, ,, ,,	,,
,, ,, ,, aurea (Golden Hedgehog Holly)	,,	,, ,, ,,	,,

Latin Name.	Character and Size.	Remarks.	Native Country.
*Ilex Aquifolium [illegible] (Yellow-berried Holly)	[illegible]	[illegible]	[illegible]
* ,, ,, [illegible]			
* ,, ,, [illegible]			
,, ,, [illegible]			
,, ,, [illegible] (Weeping [illegible] Holly)			
,, ,, [illegible] (Waterer's Holly)			
,, cornuta	Evergreen shrub [illegible]		[illegible]
* ,, crenata (Japanese Holly)	Evergreen shrub [illegible]		Japan
,, ,, variegata			
,, glabra (Syn Prinos glaber), (Ink Berry)	Evergreen shrub 2 to 3 ft		Eastern N. America
,, laevigata (Syn Prinos laevigatus)	Shrub 6 ft		
,, latifolia (Large-leaved Holly)	Evergreen tree 20 ft	Needs protection of a wall in most parts of England	Japan
,, opaca	Evergreen tree 40 ft	Sheltered and sunny position	Eastern United States
,, rotunda (Round-leaved Holly)	,,		Japan
* ,, Wilsoni		A splendid Holly, with large dark green leaves and big crimson berries	
Juglans californica (Californian Walnut)	Tree 40 ft	Good deep loam, rather dry	California
* ,, cinerea (Butter Nut)	Tree 60 ft	,, ,, ,,	North America
,, mandshurica			
,, nigra (Black Walnut)	Tree 60 ft	Good deep loam, rather dry	North America
* ,, regia (Common Walnut)	,,	,, ,, ,,	Caucasus to Himalaya
,, ,, and varieties	Trees	,,	[illegible]
,, rupestris	Tree 30 ft	,, ,, ,,	Western Texas [illegible]
,, sieboldiana (Syn J. ailantifolia)	Tree 50 ft	,, ,, ,,	Japan
Kadsura chinensis (Syn K. japonica)	Evergreen shrub 6 ft	A good wall plant	China and Japan
Lardizabala biternata	Evergreen climber 20 ft	,, ,,	Chili
*Laurus nobilis (Sweet Bay)	Evergreen tree 20 to 30 ft	Needs a sheltered position	Mediterranean region
Lindera Benzoin (Syn Laurus Benzoin), (Spice Bush)	Shrub 10 ft	,, ,, ,, and moist peaty soil	United States

,, glauca	Shrub 6 ft.	,, ,, ,, ,, ,,	Japan
,, hypoglauca	Shrub 10 ft.	,, ,, ,, ,, ,,	,,
,, obtusiloba	Tree 20 ft.	,, ,, ,, ,, ,,	,,
,, sericea (Syn Benzoin sericeum)	Shrub 6 ft.	,, ,, ,, ,, ,,	,,
Liquidambar formosana (Syn L. acerifolia)	Tree 40 ft.	Ordinary soil and position	China and Japan
,, orientalis (Syn L. imberbe)	Tree 15 ft.	,, ,, ,,	Asia Minor
* ,, styraciflua (Sweet Gum)	Tree 40 to 50 ft.	Beautiful colour in Autumn	United States
Maclura aurantiaca (Osage Orange)	Tree 15 to 40 ft.	Perfectly hardy only in South of England	Southern United States
*Morus alba (White Mulberry)	Tree 20 to 30 ft.	Ordinary soil and position	Temperate Asia
,, ,, pendula (Weeping Mulberry)	.....	,, ,, ,,	Garden form
,, ,, and varieties	.....	,, ,, ,,	Garden forms
* ,, nigra (Common Mulberry)	Tree 20 to 30 ft.	,, ,, ,,	Persia
,, rubra (Red Mulberry)	Tree 50 ft.	,, ,, ,,	North America
*Myrica asplenifolia (Syn Comptonia asplenifolia), (Sweet Fern)	Shrub 4 ft.	Moist sandy peat	,,
,, californica (Californian Wax Myrtle)	Sub-evergreen 20 ft.	Ordinary soil in a sheltered spot	California
,, cerifera	Evergreen shrub 8 to 10 ft.	Needs moist peaty soil. This and M. Gale should be planted by lake, pond, or stream margin	United States
* ,, Gale (Sweet Gale)	Shrub 3 ft. with scented foliage	,, ,, ,,	Northern Hemisphere
Nandina domestica	Evergreen shrub 6 ft.	Hardy only in south and west of England	China and Japan
Nyssa aquatica (Syn N. biflora), (Tupelo tree)	Tree 40 ft.	Needs moist peaty soil	Southern United States
,, sylvatica (Syn N. multiflora)	Tree 30 ft.	,, ,, ,,	North America
*Osmanthus Aquifolium	Evergreen shrub 5 to 10 ft.	Valuable evergreen; ordinary soil	Japan
* ,, ,, ilicifolius	,,	,, ,, ,,	Garden form
* ,, ,, purpureus	,,	,, ,, ,,	,,
* ,, ,, variegatus	,,	,, ,, ,,	,,
*Ostrya carpinifolia (Syn O. vulgaris), (Hop Hornbeam)	Tree 30 to 40 ft.	Ordinary soil and position	South Europe
*Ostrya virginica	Tree 20 to 30 ft.	,, ,, ,,	North America
Paliurus australis (Syn P. aculeatus), (Christ Thorn), (P. Spina Christi)	Shrub 8 ft.	Light warm soil and position	South Europe
*Parrotia persica (Iron tree)	Shrub 12 ft.	Light warm soil and position, brilliant leaf colour in Autumn	Persia
Phellodendron amurense	Tree 30 ft.	Light warm soil and position	Amurland

Latin Name.	Character and Height.	Remarks.	Native Country.
Phillyrea angustifolia	Evergreen shrub 8 to 10 ft.	Light warm soil and position	Mediterranean region
* ,, decora (Syn P. vilmoriniana)	Evergreen shrub 5 ft.	Light warm soil and position, a valuable evergreen shrub	Asia Minor
,, latifolia	Evergreen shrub 15 ft.	Light warm soil and position	Mediterranean region
,, media	Evergreen shrub 12 ft.	,, ,, ,,	,,
Photinia benthamiana	Evergreen shrub 10 ft.	Hardy only in South and West of England	China
,, serrulata (Chinese Hawthorn)	Evergreen shrub 15 ft.	,, ,, ,, ,,	,,
,, variabilis (Syn Pourthiœa arguta)	Evergreen shrub 8 ft.	,, ,, ,, ,,	China and Japan
*Platanus acerifolia	Tree 60 to 70 ft.	Good town tree, ordinary soil	Orient
,, cuneata	,,	,, ,, ,,	,,
,, occidentalis (Western Plane)	Tree 70 to 80 ft.	,, ,, ,,	North America
,, orientalis (Eastern Plane)	Tree 60 to 70 ft.	,, ,, ,,	Orient
*Populus alba (Abele or White Poplar)	Tree 60 to 100 ft.	Needs fairly moist soil	Europe and Asia
,, angustifolia (Narrow-leaved Poplar)	Tree 70 ft.	,, ,, ,,	North America
,, balsamifera (Balsam Poplar	,,	,, ,, ,,	,,
,, canescens (Grey Poplar)	Tree 80 ft.	,, ,, ,,	Europe
* ,, deltoidea (Syn P. canadensis), (Canadian Poplar)	,,	,, ,, ,,	North America
* ,, deltoidea aurea (Golden-leaved Canadian Poplar)	Tree 50 ft.	,, ,, ,,	Garden form
,, Fremontei	Tree 70 ft.	,, ,, ,,	California
,, grandidentata	Tree 60 ft.	,, ,, ,,	North America
,, heterophylla	Tree 50 ft.	,, ,, ,,	,,
,, laurifolia	Tree 70 ft.	,, ,, ,,	Southern Siberia
,, nigra (Black Poplar)	Tree 50 ft.	,, ,, ,,	Europe
* ,, ,, fastigiata (Lombardy Poplar)	,,	,, ,, ,,	,,
,, Sieboldii	Tree 20 to 30 ft.	,, ,, ,,	Japan
,, Simonii	Tree 60 ft.	,, ,, ,,	China
,, suaveolens	Tree 80 ft.	,, ,, ,,	Japan
* ,, tremula (Aspen)	Tree 70 ft.	,, ,, ,,	Europe and North Asia
,, pendula (Weeping Aspen)	Weeping Tree	,, ,, ,,	Garden form
,, tremuloides	Weeping Tree 40 to 50 ft.	,, ,, ,,	North America
* ,, ,, pendula (Syn P. juliana pendula)	Weeping Tree	,, ,, ,,	Garden form

PTERUCARYA CAUCASICA AT CLAREMONT, ESHER. (*Largest specimen in England. Height 45 ft., girth of stem 3 ft., from the ground 17 ft., spread of branches 110 yards.*) (*See p. 0119*).

THE CORK OAK (Quercus Suber) AT SWALLOWFIELD PARK.

,, trichocarpa	Tree 30 ft.	,, ,, ,,	Western North America
,, tristis	Tree 60 ft.	,, ,, ,,	North-East Asia
Ptelea trifoliata (Hop tree)	Small tree 8 to 9 ft.	Ordinary soil and position	North America
*Pterocarya caucasica (Syn P. fraxinifolia)	Tree 30 ft.	Good deep loam, rather dry; starts early, so catkins and leaves sometimes get injured by frost	Caucasus
,, rhoifolia	Tree 25 ft.	,, ,, ,,	Japan
,, stenoptera	Tree 20 ft.	,, ,, ,,	China
Purshia tridentata	Shrub 2 ft.	Ordinary soil and position	North-West America
Quercus acuta (Syn Q. Buergerii)	Evergreen tree 10 ft.	,, ,, ,,	Japan
,, ,, alba (White Oak)	Tree 60 ft.	,, ,, ,,	North America
,, bicolor	,,	Fairly moist soil	,,
* ,, castanæefolia (Chestnut-leaved Oak)		Ordinary soil and position	Caucasus and Asia Minor
,, Cerris (Turkey Oak)	Tree 50 to 60 ft.	,, ,, ,,	South and East Europe
,, ,, fulhamensis (Fulham Oak)	Sub-evergreen tree 50 to 60 ft.	,, ,, ,,	Garden form
* ,, ,, laciniata (Syn asplenifolia)	Tree 50 ft.	,, ,, ,,	,,
,, ,, lucombeana (Lucombe Oak)	Sub-evergreen 50 ft.	,, ,, ,,	,,
,, cinerea	Tree 30 ft.	Needs fairly moist loamy soil	Southern United States
,, coccifera (Syn Q. kermesina)	Evergreen tree 15 ft.	,, ,, ,,	Mediterranean region
* ,, coccinea (Scarlet Oak)	Tree 50 ft.	Very handsome, leaves in autumn brilliant scarlet	North America
,, conferta (Q. pannonica), (Hungarian Oak)	Tree 30 ft.	Handsome; very quick in growth; leaves deeply lobed	Italy and Austria
,, cuneata (Syns Q. triloba, Q. falcata)	Tree 80 ft.	Needs fairly moist loamy soil	North America
* ,, cuspidata	Evergreen tree 30 ft.	,, ,, ,,	Japan
* ,, dentata (Syn Q. Daimyo)	Tree 30 ft.	Needs good loamy soil, fairly moist	,,
,, garryana	Tree 50 ft.	,, ,, ,,	North-West America
* ,, glabra (Japanese Oak)	Evergreen shrub 10 ft.	Handsome, large leaves, a good evergreen oak	Japan
,, glauca	Evergreen tree 30 ft.	Needs good loamy soil, fairly moist	,,
,, heterophylla	Tree 40 ft.	Ordinary soil and position	United States
* ,, Ilex (Evergreen or Holm Oak)	Evergreen 20 to 40 ft.	Good deep sandy loam; very handsome	Mediterranean region
,, ,, and varieties	Evergreen, various heights	,, ,, ,,	Garden forms
,, imbricaria	Tree 40 to 50 ft.	Ordinary soil and position	United States
,, Kelloggii	Tree 70 ft.	Fairly moist soil, sheltered position	Oregon and California
,, lanuginosa	Tree 50 ft.	Ordinary soil and position	Europe and West. Asia
,, laurifolia (Syn Q. obtusa)	Tree 80 ft.	Needs moist soil	United States

	Latin Name.	Character and Height.	Remarks.	Native Country.
	Quercus Libani	Tree 30 ft.	Ordinary soil and position	Asia Minor
	,, lobata	Tree 80 ft.	Fairly moist soil, sheltered position	California
	,, lusitanica	Tree 40 ft.	,, ,, ,,	South Europe and Asia Minor
*	,, macrocarpa (Burr Oak)	Tree 30 ft.	Ordinary soil and position	North America
	,, marilandica	Tree 30 to 50 ft.	,, ,, ,,	United States
	,, Michauxii	Tree 80 ft.	,, ,, ,,	Southern United States
	,, Mirbeckii	Tree 30 ft.	,, ,, ,,	Spain, Portugal, and North Africa
	,, nigra	Tree 25 ft.	Fairly moist soil	Southern United States
*	,, palustris (Pin Oak)	Tree 60 ft.	Leaves charming in Spring and Autumn	United States
	,, pedunculata (Syn Q. Robur pedunculata), (British Oak)	Tree 50 to 100 ft.	Ordinary soil and position	Europe and Asia
*	,, pedunculata Concordia (Golden-leaved British Oak)	Tree 20 ft.	Ordinary soil and position; very handsome golden-leaved tree	Garden form
	,, pedunculata fastigiata	Tree 50 ft.	Ordinary soil and position	Garden form
	,, ,, heterophylla	Tree 40 ft.	,, ,, ,,	,,
	,, ,, pendula (Weeping Oak)	Tree	,, ,, ,,	,,
	,, ,, purpurascens	Tree 50 ft.	,, ,, ,,	,,
*	,, Phellos (Willow Oak)	,,	,, ,, ,,	United States
	,, phillyræoides	Evergreen tree 15 ft.	Fairly moist soil, sheltered spot	Japan
	,, pontica	Tree or shrub 15 ft.	Ordinary soil and position	Asia Minor
	,, prinoides	Tree 20 to 30 ft.	,, ,, ,,	United States
	,, Prinos	Tree 70 to 80 ft.	,, ,, ,,	Eastern North America
	,, Pseudo-suber	Sub-evergreen tree 50 ft.	,, ,, ,, sheltered spot	South Europe
	,, pumila	Spreading shrub 10 ft.	,, ,,	Eastern United States
	,, reticulata	Evergreen shrub 10 ft.	Hardy only in South and West of England	New Mexico and Arizona
*	,, rubra (Champion Oak)	Tree 60 to 80 ft.	Ordinary soil and position; brilliant Autumn colour; very handsome	North America
	,, serrata	Tree 20 to 30 ft.	Ordinary soil and position	China and Japan
	,, sessiliflora	Tree 60 ft.	,, ,, ,,	Europe, West Asia
	,, ,, and varieties	Trees various	,, ,, ,,	Garden forms
	,, ,, stellata	Tree 50 ft.	,, ,, ,,	United States

EVERGREEN OAKS. (*Frogmore.*)

LATIN NAME.	CHARACTER AND HEIGHT.	REMARKS.	NATIVE COUNTRY.
Elæagnus umbellata (Syn E. japonica)	Sub-evergreen shrub 8 ft.	Will do well in ordinary soil	Japan
Empetrum nigrum (Crowberry)	Evergreen shrub 1 ft.	Needs moist peaty soil	Britain
Ephedra americana	Evergreen shrub 3 ft.	Does well in dry stony places	Chili
,, distachya	Evergreen shrub 3 to 4 ft.	,, ,, ,,	Europe and Asia Minor
,, gerardiana	Evergreen shrub 2 ft.	Rather tender	Himalaya
,, helvetica	Evergreen shrub 2 ft.	Does well in dry stony places	South Europe
,, trifurca	Evergreen shrub 3 ft.	,, ,, ,,	Western North America
Ercilla volubilis (Syn E. spicata)	Evergreen twiner 15 ft.	Needs protection of a wall in most districts	Chili
Eriobotrya japonica (Syn Photinia japonica), (Loquat), handsome leaves	Evergreen tree 20 ft.	,, ,, ,, ,,	China and Japan
Eurya japonica	Evergreen shrub 6 ft.	Hardy only in south and west	India, China, and Japan
Fagus ferruginea (Syn F. americana), (American beech)	Tree 40 to 60 ft.	Ordinary soil and position	North America
* ,, sylvatica (Common Beech)	Tree 60 to 100 ft.	,, ,, ,,	Europe and Asia Minor
* ,, ,, atropurpurea (Purple-leaved Beech)	Tree 50 ft.	Best dark-leaved form	Garden form
* ,, ,, cuprea (Copper Beech)	,,	Ordinary soil and position	,,
,, ,, heterophylla	,,	,, ,, ,,	,,
* ,, ,, pendula (Weeping Beech)	Tree, height various	,, ,, ,,	,,
* ,, ,, purpurea pendula	,,	,, ,, ,,	,,
,, ,, and other varieties	,,	,, ,, ,,	Garden forms
*Fatsia japonica (Syn Aralia japonica)	Evergreen shrub 3 to 5 feet	Needs sheltered spot, cool moist soil	Japan
*Ficus Carica (Common Fig)	Tree or shrub 15 to 20 ft.	Does best on wall, good town plant	Afghanistan and Eastern Persia
Fraxinus americana (White Ash)	Tree 30 to 40 ft.	Ordinary soil and position	North America
,, augustifolia	Tree 30 to 50 ft.	,, ,, ,,	Southern Europe
,, anomala	Tree 12 ft.	Needs sheltered spot	Utah
,, caroliniana (Water Ash)	Tree 30 to 50 ft.	Ordinary soil and position	United States
,, chinensis (Chinese Ash)	Tree 25 ft.	,, ,, ,,	China
* ,, excelsior (Common Ash)	Tree 30 to 80 ft.	,, ,, ,,	Europe
* ,, ,, aurea	Tree 50 ft.	,, ,, ,,	Garden form
,, ,, aurea pendula (Weeping Golden Ash)	Tree, height various	,, ,, ,,	,,
,, ,, crispa	Tree 30 ft.	,, ,, ,,	,,

,, ,, heterophylla (Syn monophylla)	Tree 50 ft.	,, ,, ,,	,,
* ,, ,, pendula (Weeping Ash)	Tree, height various	,, ,, ,,	,,
,, ,, and other varieties	Trees, height various	,, ,, ,,	Garden forms
,, mandshurica	Tree 70 to 80 ft.	,, ,, ,,	Mandchuria and Japan
,, nigra (Syn F. sambucifolia)	Tree 50 ft.	,, ,, ,,	North America
,, numidica	Tree 30 ft.	,, ,, ,,	North Africa
,, oregona (Syn F. californica) (Oregon Ash)	Tree 50 ft.	,, ,, ,,	Western United States
* ,, parvifolia (Syn F. lentiscifolia)	Tree 30 to 50 ft.	,, ,, ,,	South Europe
,, ,, pendula	Tree, height various	,, ,, ,,	Garden form
,, pennsylvanica (Syn F. pubescens)	Tree 30 ft.	,, ,, ,,	North America
,, potamophila (Swamp Ash)	,,	,, ,, ,,	Turkestan
,, quadrangulata (Blue Ash)	Tree 60 to 70 ft.	,, ,, ,,	United States
Gleditschia australis	Tree 30 ft.	,, ,, ,,	Southern China
,, japonica (Japanese Locust)	Tree 50 ft.	,, ,, ,,	Japan
,, monosperma (Water Locust)	Tree 60 ft.	,, ,, ,,	Southern United States
,, sinensis (Syn G. ferox, G. horrida)	Tree 30 ft.	,, ,, ,,	China
,, triacanthos (Honey Locust)	Tree 60 ft.	,, ,, ,,	Eastern United States
Griselinia littoralis	Evergreen tree or shrub 20 ft.	Hardy only in South and West of England	New Zealand
,, lucida	Evergreen tree 15 ft.	,, ,, ,,	,,
Gymnocladus canadensis (Kentucky Coffee Tree)	Tree 50 ft.	Needs good deep soil	North America
,, chinensis	Tree 25 ft.	,, ,,	China
Hymenanthera crassifolia	Shrub 3 ft.	Succeeds in fairly moist peaty soil	New Zealand
Idesia polycarpa	Tree 20 ft.	Deep open loam, shelter from strong winds	Japan
Ilex ambigua (Syn Prinos ambigua)	Shrub 4 to 5 ft.	Ordinary soil and position	Southern United States
,, Amelanchier (Syn Prinos lanceolata)	Shrub 6 to 8 ft.	,, ,, ,,	North America
,, Aquifolium (Common Holly)	Evergreen tree 10 to 40 ft.	,, ,, ,,	Europe
,, ,, angustifolium (Narrow-leaved Holly)	Evergreen tree or shrub	,, ,, ,,	Garden form
,, ,, argenteo marginata (Silver Variegated Holly)	,,	,, ,, ,,	,,
* ,, ,, argenteo pendula (Weeping Silver Holly)	,,	,, ,, ,,	,,
* ,, ,, aureo marginata (Golden Holly)	,,	,, ,, ,,	,,
,, ,, ferox (Hedgehog Holly)	,,	,, ,, ,,	,,
,, ,, ,, aurea (Golden Hedgehog Holly)	,,	,, ,, ,,	,,

Latin Name.	Character and Height.	Remarks.	Native Country.
*Ilex Aquifolium fructo luteo (Yellow-berried Holly)	Evergreen tree or shrub	Ordinary soil and position	Garden form
* ,, ,, handsworthensis (Handsworth Holly)	,,	,, ,, ,,	,,
* ,, ,, hodginsi	,,	,, ,, ,,	,,
,, ,, laurifolia var. nova, large leaves	,,	,, ,, ,,	,,
,, ,, pendula tricolor (Weeping Variegated Holly)	,,	,, ,, ,,	,,
,, ,, watereriana (Waterer's Holly)	,,	,, ,, ,,	,,
,, cornuta	Evergreen shrub 6 ft.	,, ,, ,,	China
* ,, crenata (Japanese Holly)	Evergreen shrub 3 ft.	,, ,, ,,	Japan
,, ,, variegata	,,	,, ,, ,,	,,
,, glabra (Syn Prinos glaber), (Ink Berry)	Evergreen shrub 2 to 3 ft.	,, ,, ,,	Eastern United States
,, lævigata (Syn Prinos lævigatus)	Shrub 6 ft.	,, ,, ,,	,,
,, latifolia (Large-leaved Holly)	Evergreen tree 20 ft.	Needs protection of a wall in most parts of England	Japan
,, opaca	Evergreen tree 30 ft.	Ordinary soil and position	Eastern United States
,, rotunda (Round-leaved Holly)	,,	,, ,, ,,	Japan
* ,, Wilsoni		A splendid Holly, with large dark-green leaves and big crimson berries	
Juglans californica (Californian Walnut)	Tree 30 ft.	Good deep loam, rather dry	California
* ,, cinerea (Butter Nut)	Tree 60 ft.	,, ,, ,,	North America
,, mandshurica	.....	.....	.....
,, nigra (Black Walnut)	Tree 60 ft.	Good deep loam, rather dry	North America
* ,, regia (Common Walnut)	,,	,, ,, ,,	Caucasus to Himalaya
,, ,, and varieties	Trees	,, ,, ,,	Garden forms
,, rupestris	Tree 30 ft.	,, ,, ,,	Western United States
,, sieboldiana (Syn J. ailantifolia)	Tree 50 ft.	,, ,, ,,	Japan
Kadsura chinensis (Syn K. japonica)	Evergreen shrub 6 ft.	A good wall-plant	China and Japan
Lardizabala biternata	Evergreen climber 20 ft.	,, ,,	Chili
*Laurus nobilis (Sweet Bay)	Evergreen tree 20 to 40 ft.	Needs a sheltered position	Mediterranean region
Lindera Benzoin (Syn Laurus Benzoin), (Spice Bush)	Shrub 10 ft.	,, ,, ,, and moist peaty soil	United States

,, glauca	Shrub 6 ft.	,, ,, ,, ,, ,,	Japan
,, hypoglauca	Shrub 10 ft.	,, ,, ,, ,, ,,	,,
,, obtusiloba	Tree 20 ft.	,, ,, ,, ,, ,,	,,
,, sericea (Syn Benzoin sericeum)	Shrub 6 ft.	,, ,, ,, ,, ,,	,,
Liquidambar formosana (Syn L. acerifolia)	Tree 40 ft.	Ordinary soil and position	China and Japan
,, orientalis (Syn L. imberbe)	Tree 15 ft.	,, ,, ,,	Asia Minor
* ,, styraciflua (Sweet Gum)	Tree 40 to 50 ft.	Beautiful colour in Autumn	United States
Maclura aurantiaca (Osage Orange)	Tree 15 to 40 ft.	Perfectly hardy only in South of England	Southern United States
*Morus alba (White Mulberry)	Tree 20 to 30 ft.	Ordinary soil and position	Temperate Asia
,, ,, pendula (Weeping Mulberry)	.....	,, ,, ,,	Garden form
,, ,, and varieties	.....	,, ,, ,,	Garden forms
* ,, nigra (Common Mulberry)	Tree 20 to 30 ft.	,, ,, ,,	Persia
,, rubra (Red Mulberry)	Tree 50 ft.	,, ,, ,,	North America
*Myrica asplenifolia (Syn Comptonia asplenifolia), (Sweet Fern)	Shrub 4 ft.	Moist sandy peat	,,
,, californica (Californian Wax Myrtle)	Sub-evergreen 20 ft.	Ordinary soil in a sheltered spot	California
,, cerifera	Evergreen shrub 8 to 10 ft.	Needs moist peaty soil. This and M. Gale should be planted by lake, pond, or stream margin	United States
* ,, Gale (Sweet Gale)	Shrub 3 ft. with scented foliage	,, ,, ,,	Northern Hemisphere
Nandina domestica	Evergreen shrub 6 ft.	Hardy only in south and west of England	China and Japan
Nyssa aquatica (Syn N. biflora), (Tupelo tree)	Tree 40 ft.	Needs moist peaty soil	Southern United States
,, sylvatica (Syn N. multiflora)	Tree 30 ft.	,, ,, ,,	North America
*Osmanthus Aquifolium	Evergreen shrub 5 to 10 ft.	Valuable evergreen; ordinary soil	Japan
* ,, ,, ilicifolius	,,	,, ,, ,,	Garden form
* ,, ,, purpureus	,,	,, ,, ,,	,,
* ,, ,, variegatus	,,	,, ,, ,,	,,
*Ostrya carpinifolia (Syn O. vulgaris), (Hop Hornbeam)	Tree 30 to 40 ft.	Ordinary soil and position	South Europe
*Ostrya virginica	Tree 20 to 30 ft.	,, ,, ,,	North America
Paliurus australis (Syn P. aculeatus), (Christ Thorn), (P. Spina Christi)	Shrub 8 ft.	Light warm soil and position	South Europe
*Parrotia persica (Iron tree)	Shrub 12 ft.	Light warm soil and position, brilliant leaf colour in Autumn	Persia
Phellodendron amurense	Tree 30 ft.	Light warm soil and position	Amurland

Latin Name.	Character and Height.	Remarks.	Native Country.
Phillyrea angustifolia	Evergreen shrub 8 to 10 ft.	Light warm soil and position	Mediterranean region
* ,, decora (Syn P. vilmoriniana)	Evergreen shrub 5 ft.	Light warm soil and position, a valuable evergreen shrub	Asia Minor
,, latifolia	Evergreen shrub 15 ft.	Light warm soil and position	Mediterranean region
,, media	Evergreen shrub 12 ft.	,, ,, ,,	,,
Photinia benthamiana	Evergreen shrub 10 ft.	Hardy only in South and West of England	China
,, serrulata (Chinese Hawthorn)	Evergreen shrub 15 ft.	,, ,, ,, ,,	,,
,, variabilis (Syn Pourthiœa arguta)	Evergreen shrub 8 ft.	,, ,, ,, ,,	China and Japan
*Platanus acerifolia	Tree 60 to 70 ft.	Good town tree, ordinary soil	Orient
,, cuneata	,,	,, ,, ,,	,,
,, occidentalis (Western Plane)	Tree 70 to 80 ft.	,, ,, ,,	North America
,, orientalis (Eastern Plane)	Tree 60 to 70 ft.	,, ,, ,,	Orient
*Populus alba (Abele or White Poplar)	Tree 60 to 100 ft.	Needs fairly moist soil	Europe and Asia
,, angustifolia (Narrow-leaved Poplar)	Tree 70 ft.	,, ,, ,,	North America
,, balsamifera (Balsam Poplar	,,	,, ,, ,,	,,
,, canescens (Grey Poplar)	Tree 80 ft.	,, ,, ,,	Europe
* ,, deltoidea (Syn P. canadensis), (Canadian Poplar)	,,	,, ,, ,,	North America
* ,, deltoidea aurea (Golden-leaved Canadian Poplar)	Tree 50 ft.	,, ,, ,,	Garden form
,, Fremontei	Tree 70 ft.	,, ,, ,,	California
,, grandidentata	Tree 60 ft.	,, ,, ,,	North America
,, heterophylla	Tree 50 ft.	,, ,, ,,	,,
,, laurifolia	Tree 70 ft.	,, ,, ,,	Southern Siberia
,, nigra (Black Poplar)	Tree 50 ft.	,, ,, ,,	Europe
* ,, ,, fastigiata (Lombardy Poplar)	,,	,, ,, ,,	,,
,, Sieboldii	Tree 20 to 30 ft.	,, ,, ,,	Japan
,, Simonii	Tree 60 ft.	,, ,, ,,	China
,, suaveolens	Tree 80 ft.	,, ,, ,,	Japan
* ,, tremula (Aspen)	Tree 70 ft.	,, ,, ,,	Europe and North Asia
,, pendula (Weeping Aspen)	Weeping Tree	,, ,, ,,	Garden form
,, tremuloides	Weeping Tree 40 to 50 ft.	,, ,, ,,	North America
* ,, ,, pendula (Syn P. juliana pendula)	Weeping Tree	,, ,, ,,	Garden form

PTERUCARYA CAUCASICA AT CLAREMONT, ESHER. (*Largest specimen in England. Height 45 ft., girth of stem 3 ft., from the ground 17 ft., spread of branches 110 yards.*) (*See p. 0119*).

THE CORK OAK (Quercus Suber) AT SWALLOWFIELD PARK.

,, trichocarpa	Tree 30 ft.	,, ,, ,,	Western North America
,, tristis	Tree 60 ft.	,, ,, ,,	North-East Asia
Ptelea trifoliata (Hop tree)	Small tree 8 to 9 ft.	Ordinary soil and position	North America
*Pterocarya caucasica (Syn P. fraxinifolia)	Tree 30 ft.	Good deep loam, rather dry; starts early, so catkins and leaves sometimes get injured by frost	Caucasus
,, rhoifolia	Tree 25 ft.	,, ,, ,,	Japan
,, stenoptera	Tree 20 ft.	,, ,, ,,	China
Purshia tridentata	Shrub 2 ft.	Ordinary soil and position	North-West America
Quercus acuta (Syn Q. Buergerii)	Evergreen tree 10 ft.	,, ,, ,,	Japan
,, ,, alba (White Oak)	Tree 60 ft.	,, ,, ,,	North America
,, bicolor	,,	Fairly moist soil	,,
* ,, castanæefolia (Chestnut-leaved Oak)		Ordinary soil and position	Caucasus and Asia Minor
,, Cerris (Turkey Oak)	Tree 50 to 60 ft.	,, ,, ,,	South and East Europe
,, ,, fulhamensis (Fulham Oak)	Sub-evergreen tree 50 to 60 ft.	,, ,, ,,	Garden form
* ,, ,, laciniata (Syn asplenifolia)	Tree 50 ft.	,, ,, ,,	,,
,, ,, lucombeana (Lucombe Oak)	Sub-evergreen 50 ft.	,, ,, ,,	,,
,, cinerea	Tree 30 ft.	Needs fairly moist loamy soil	Southern United States
,, coccifera (Syn Q. kermesina)	Evergreen tree 15 ft.	,, ,, ,,	Mediterranean region
* ,, coccinea (Scarlet Oak)	Tree 50 ft.	Very handsome, leaves in autumn brilliant scarlet	North America
,, conferta (Q. pannonica), (Hungarian Oak)	Tree 30 ft.	Handsome; very quick in growth; leaves deeply lobed	Italy and Austria
,, cuneata (Syns Q. triloba, Q. falcata)	Tree 80 ft.	Needs fairly moist loamy soil	North America
* ,, cuspidata	Evergreen tree 30 ft.	,, ,, ,,	Japan
* ,, dentata (Syn Q. Daimyo)	Tree 30 ft.	Needs good loamy soil, fairly moist	,,
,, garryana	Tree 50 ft.	,, ,, ,,	North-West America
* ,, glabra (Japanese Oak)	Evergreen shrub 10 ft.	Handsome, large leaves, a good evergreen oak	Japan
,, glauca	Evergreen tree 30 ft.	Needs good loamy soil, fairly moist	,,
,, heterophylla	Tree 40 ft.	Ordinary soil and position	United States
* ,, Ilex (Evergreen or Holm Oak)	Evergreen 20 to 40 ft.	Good deep sandy loam; very handsome	Mediterranean region
,, ,, and varieties	Evergreen, various heights	,, ,, ,,	Garden forms
,, imbricaria	Tree 40 to 50 ft.	Ordinary soil and position	United States
,, Kelloggii	Tree 70 ft.	Fairly moist soil, sheltered position	Oregon and California
,, lanuginosa	Tree 50 ft.	Ordinary soil and position	Europe and West. Asia
,, laurifolia (Syn Q. obtusa)	Tree 80 ft.	Needs moist soil	United States

	Latin Name.	Character and Height.	Remarks.	Native Country.
	Quercus Libani	Tree 30 ft.	Ordinary soil and position	Asia Minor
	,, lobata	Tree 80 ft.	Fairly moist soil, sheltered position	California
	,, lusitanica	Tree 40 ft.	,, ,, ,,	South Europe and Asia Minor
*	,, macrocarpa (Burr Oak)	Tree 30 ft.	Ordinary soil and position	North America
	,, marilandica	Tree 30 to 50 ft.	,, ,, ,,	United States
	,, Michauxii	Tree 80 ft.	,, ,, ,,	Southern United States
	,, Mirbeckii	Tree 30 ft.	,, ,, ,,	Spain, Portugal, and North Africa
	,, nigra	Tree 25 ft.	Fairly moist soil	Southern United States
*	,, palustris (Pin Oak)	Tree 60 ft.	Leaves charming in Spring and Autumn	United States
	,, pedunculata (Syn Q. Robur pedunculata), (British Oak)	Tree 50 to 100 ft.	Ordinary soil and position	Europe and Asia
*	,, pedunculata Concordia (Golden-leaved British Oak)	Tree 20 ft.	Ordinary soil and position; very handsome golden-leaved tree	Garden form
	,, pedunculata fastigiata	Tree 50 ft.	Ordinary soil and position	Garden form
	,, ,, heterophylla	Tree 40 ft.	,, ,, ,,	,,
	,, ,, pendula (Weeping Oak)	Tree	,, ,, ,,	,,
	,, ,, purpurascens	Tree 50 ft.	,, ,, ,,	,,
*	,, Phellos (Willow Oak)	,,	,, ,, ,,	United States
	,, phillyræoides	Evergreen tree 15 ft.	Fairly moist soil, sheltered spot	Japan
	,, pontica	Tree or shrub 15 ft.	Ordinary soil and position	Asia Minor
	,, prinoides	Tree 20 to 30 ft.	,, ,, ,,	United States
	,, Prinos	Tree 70 to 80 ft.	,, ,, ,,	Eastern North America
	,, Pseudo-suber	Sub-evergreen tree 50 ft.	,, ,, ,, sheltered spot	South Europe
	,, pumila	Spreading shrub 10 ft.	,, ,,	Eastern United States
	,, reticulata	Evergreen shrub 10 ft.	Hardy only in South and West of England	New Mexico and Arizona
*	,, rubra (Champion Oak)	Tree 60 to 80 ft.	Ordinary soil and position; brilliant Autumn colour; very handsome	North America
	,, serrata	Tree 20 to 30 ft.	Ordinary soil and position	China and Japan
	,, sessiliflora	Tree 60 ft.	,, ,, ,,	Europe, West Asia
	,, ,, and varieties	Trees various	,, ,, ,,	Garden forms
	,, ,, stellata	Tree 50 ft.	,, ,, ,,	United States

EVERGREEN OAKS. (*Frogmore.*)

,, Suber (Cork Oak)	Evergreen tree 25 ft.	Rather more tender than the Holm Oak (gives the cork of commerce)	South Europe, North Africa
,, Toza (Syn Q. Tauzin)	Tree 30 ft.	Ordinary soil and position	South-west Europe
,, Turneri (Syn Q. austriaca sempervirens, Q. glandulifera)	Sub-evergreen tree 40 to 50 ft.	,, ,, ,,	Garden origin
,, undulata	Tree 20 ft.	Ordinary soil and sheltered spot	Western North America
,, velutina	Tree 70 to 80 ft.	,, and position	North America
*Rhamnus Alaternus	Evergreen shrub or tree 20 ft.	,, ,,	South-west Europe
,, alnifolius (Alder-leaved Buckthorn)	Shrub 2 to 4 ft.	Moist peaty soil	United States
,, alpinus (Alpine Buckthorn)	Shrub 4 ft.	Ordinary soil and position	Alpine regions
,, californicus (Californian Buckthorn)	Evergreen shrub 10 ft.	,, and sheltered position	California
,, carolinianus	Shrub 6 to 8 ft.	Ordinary soil and position	Southern United States
,, catharticus	Shrub 5 to 10 ft.	,, ,, ,,	Europe and Asia
,, davuricus	Shrub 12 ft.	,, ,, ,,	Siberia
,, Frangula	Shrub 5 to 10 ft.	,, ,, ,,	Europe
,, infectorius	Shrub 2 ft.	,, ,, ,,	South Europe
,, libanoticus	Shrub 6 ft.	,, ,, ,,	Asia Minor and Syria
,, purshianus (Syn R. rubra)	Shrub 10 ft.	,, ,, ,,	California
,, saxatilis	Shrub 2 ft.	,, ,, ,,	Europe
,, tinctorius	Shrub 8 ft.	,, ,, ,,	Europe and Asia
Rhus aromatica	,,	,, ,, ,,	Southern United States
,, copallina	Shrub 6 ft.	,, ,, ,,	Eastern United States
,, Cotinus (Venetian, Sumach, Wig Tree, Smoke Bush)	Shrub 6 to 8 ft.	,, ,, ,,	Europe
* ,, cotinoides	Shrub 15 ft.	,, ,, ,,	North America
* ,, glabra (Syn R. coccinea)	Tree 15 ft.	,, ,, ,,	United States
* ,, ,, laciniata	Shrub 6 ft.	,, ,, ,,	Garden form
,, Osbeckei	Tree 20 ft.	,, and sheltered position	China and Japan
,, succedanea	Shrub 10 ft.	Hardy only in South and West of England	,,
,, Toxicodendron (Syn Ampelopsis japonica), (Poison Oak, Poison Ivy), (Syn Ampelopsis Hoggii)	Twining shrub 20 ft.	Ordinary soil and position. Very poisonous	North America and Japan
* ,, typhina (Stag's-horn Sumach)	Tree 25 ft.	,, ,, ,,	Eastern United States
,, venenata (Syn R. vernix), (Poison Sumach)	Shrub 12 ft.	,, ,, ,, Very poisonous	,,
,, vernicifera	Tree 25 ft.	,, sheltered position	China and Japan
*Ruscus aculeatus (Butcher's Broom)	Evergreen shrub 2 ft.	Will grow well under the shade of trees	Europe

LATIN NAME.	CHARACTER AND HEIGHT.	REMARKS.	NATIVE COUNTRY.
*Ruscus Hypoglossum	Evergreen shrub 2 to 3 ft.	Will grow well under the shade of trees	South Europe and North Africa
,, Hypophyllum	,,	,, ,, ,, ,,	South-west Europe
Ruta graveolens	Shrub 3 ft.	Sandy loam, sunny spot	South Europe
Salix alba (White Willow)	Tree 60 ft.	Needs moist soil, indeed will grow in boggy places	Europe and Asia
* ,, ,, britzensis (Cardinal Willow)	Tree 25 ft.	Brilliant bark, colour very effective	Garden form
* ,, ,, vitellina (Golden-barked Willow)	,,	Needs moist soil, indeed will grow in boggy places	,,
,, ambigua	Shrub 2 ft.	,, ,, ,, ,,	Europe
,, aurita	Tree 15 ft.	,, ,, ,, ,,	Eastern North America
* ,, babylonica (Babylonian Weeping Willow)	Tree 30 ft.	,, ,, ,, ,,	Japan
,, ,, annularis	,,	,, ,, ,, ,,	Garden form
,, cæsia (Syn S. prostrata), (Grey-leaved Willow)	Shrub 3 ft.	,, ,, ,, ,,	Switzerland
,, Caprea (Goat Willow)	Tree 25 ft.	,, ,, ,, ,,	Europe and North Asia
* ,, ,, pendula (Kilmarnock Willow)	Weeping	,, ,, ,, ,,	Garden form
,, cinerea	Tree 20 ft.	,, ,, ,, ,,	Europe and North Asia
,, cordata	Tree 15 ft.	,, ,, ,, ,,	North America
,, cuspidata	Tree 25 ft.	,, ,, ,, ,,	Europe
,, daphnoides (Violet Willow)	Tree 10 to 20 ft.	Very beautiful yellow cat kins, robust	,,
,, decipiens	Tree 30 ft.	Needs moist soil, indeed will grow in boggy places	,,
,, doniana	Shrub 5 ft.	,, ,, ,, ,,	,,
,, fragilis (Syn S. russelliana), (Crack Willow)	Tree 60 to 70 ft.	Very beautiful willow	Europe and North Asia
,, ,, basfordiana	Tree 25 ft.	Needs moist soil, indeed will grow in boggy places	Garden form
,, hastata	Shrub 6 to 8 ft.	,, ,, ,, ,,	Europe and North Asia
,, herbacea	Shrub 2 to 3 in.	A good rockwork plant	,,
,, hexandra	Tree 20 ft.	Needs moist soil, indeed will grow in boggy places	Europe
,, humilis	Shrub 2 ft.	,, ,, ,, ,,	North America
,, lanata	Shrub 4 ft.	,, ,, ,, ,,	Arctic Europe
,, Lapponum (Lapland Willow)	Shrub 1 ft.	,, ,, ,, ,,	Europe and North Asia
,, lasiandra	Shrub 12 ft.	,, ,, ,, ,,	Western United States
* ,, laurina (Syn S. bicolor)	Shrub 10 ft.	,, ,, ,, ,,	Europe
,, lucida	Shrub 10 to 12 ft.	,, ,, ,, ,,	North America
,, Myrsinites	Shrub 6 in. to 1 ft.	A good rockwork plant	North Hemisphere
,, myrtilloides (Syn S. elegans)	Shrub 2 to 4 ft.	Needs moist soil, indeed will grow in boggy places	,,
,, nigra (Black Willow)	Tree 25 ft.	,, ,, ,, ,,	North America
,, nigricans	Tree 10 to 12 ft.	,, ,, ,, ,,	Tyrol

* ,, pentandra	Shrub 8 to 9 ft.	,, ,, ,, ,,	Europe and North Asia
,, petiolaris (Syn S. fuscata)	Shrub 8 to 10 ft.	,, ,, ,, ,,	North America
,, phylicifolia	Shrub 6 ft.	,, ,, ,, ,,	Tyrol
,, purpurea (Syn S. fissa), (Purple Willow)	Shrub 8 to 10 ft.	,, ,, ,, ,,	Europe and North Asia
* ,, ,, pendula (Syn S. americana pendula), (American Weeping Willow)	Shrub Weeping	,, ,, ,, ,,	Garden form
,, repens	Shrub 1 ft.	Will grow in dry sandy soils	Europe and North Asia
* ,, ,, argentea (Syn S. sericea pendula)	Shrub Weeping	Needs moist soil, indeed will grow in boggy places	Garden form
,, reticulata	Shrub 6 *in.*	A good rockwork plant	Arctic regions
,, retusa	Shrub 6 *in.* to 1 ft.	,, ,, ,,	Europe and North Asia
,, rosmarinifolia (Rosemary-leaved Willow	Shrub 2 to 4 ft.	Needs moist soil, indeed will grow in boggy places. Very charming	Europe
,, rubra	Tree 10 to 30 ft.	,, ,, ,, ,,	Europe
,, sieboldiana	Tree 15 ft.	,, ,, ,, ,,	Japan
,, smithiana (Syn S. pannosa)	Shrub 5 ft.	,, ,, ,, ,,	Europe
,, stipularis	Tree 15 ft.	,, ,, ,, ,,	Europe
,, triandra	Tree 20 ft.	,, ,, ,, ,,	Europe and North Asia
,, undulata (Syn S. lanceolata)	Shrub 12 to 15 ft.	,, ,, ,, ,,	Europe
,, viminalis (Syn S. longifolia), (Twiggy Willow)	Tree 25 ft.	,, ,, ,, ,,	North Europe and Asia
,, viridis	,,	,, ,, ,, ,,	Europe
*Sambucus nigra aurea (Golden-leaved Elder)	Tree 25 ft.	Ordinary soil and position, full sun	Garden form
,, ,, laciniata (Cut-leaved Elder)	,,	,, ,, ,, ,,	,,
,, racemosa (Scarlet-berried Elder)	Tree 10 to 15 ft.	Needs a fairly cool moist soil	North Hemisphere
* ,, ,, plumosa	Tree 12 ft.	,, ,, ,,	Garden form
* ,, ,, ,, aurea	Tree 8 ft.	,, ,, ,,	,,
,, ,, serratifolia	Tree 10 to 15 ft.	,, ,, ,,	,,
* ,, ,, tenuifolia	Shrub 6 ft.	,, ,, ,,	,,
Santolina Chamæcyparissus (Lavender Cotton)	Evergreen shrub 2 to 3 ft.	Grows well in dry sandy soils	South Europe
,, rosmarinifolia	Evergreen shrub 2 ft.	,, ,, ,,	Spain and Portugal
,, viridis	Evergreen shrub 3 ft.	,, ,, ,,	South Europe
Sarcococca Hookeriana	Evergreen shrub 4 ft.	Hardy only in the South and West of England	Himalaya
Sassafras officinale (Syn Laurus Sassafras (The Sassafras tree)	Tree 15 to 25 ft.	Needs fairly moist soil, sheltered position	United States
Schizandra chinensis	Twining shrub 20 ft.	Succeeds best as a wall plant	China and Japan
Smilax aspera	Twining evergreen shrub 10 ft.	Should be trained to a wall or trellis. Needs shelter	Mediterranean region

Latin Name.	Character and Height.	Remarks.	Native Country.
Smilax aspera maculata	Twining evergreen shrub 10 ft.	Should be trained to a wall or trellis. Needs shelter	Mediterranean region
,, Bona-nox (Syn S. hastata)	Twining evergreen shrub 5 to 10 ft.	,, ,, ,, ,,	Southern United States
,, China	Twining evergreen shrub 20 ft.	,, ,, ,, ,,	China
,, excelsa	Twining evergreen shrub 10 ft.	,, ,, ,, ,,	Syria
,, glauca (Syn S. Sarsaparilla)	Twining evergreen shrub 3 ft.	,, ,, ,, ,,	North America
,, rotundifolia (Syn S. caduca)	Twining deciduous shrub 8 ft.	,, ,, ,, ,,	,,
,, tamnoides	Twining evergreen shrub 10 ft.	,, ,, ,, ,,	,,
Stachyurus præcox	Small tree 10 to 12 ft.	Moist soil and sheltered spot	China and Japan
Stauntonia hexaphylla	Evergreen twiner 20 ft.	Needs the protection of a wall in the London district	,,
Stephanandra flexuosa (Syn S. incisa)	Shrub 5 ft.	Ordinary soil and position	,,
,, Tanakæ	Shrub 3 ft.	,, ,, ,,	Japan
Stranvæsia glaucescens	Evergreen tree 20 ft.	Hardy only in South and West of England	Himalaya
Symplocos cratægoides	Small tree 15 ft.	Needs sheltered spot	Himalaya to Japan
,, japonica (Syn S. lucida)	Shrub 10 ft.	,, ,, ,,	China and Japan
,, tinctoria	Shrub 3 ft.	,, ,, ,,	Southern United States
Teucrium fruticans (Free Germander)	Evergreen shrub 2 to 3 ft.	Needs sheltered spot and light soil	South Europe
Tilia americana (Syn T. glabra), (American Lime)	Tree 60 to 70 ft.	Ordinary soil and position	North America
* ,, argentea (Syn T. americana pubescens), (Silver Lime)	Tree 30 to 50 ft.	,, ,, ,,	Eastern Europe
,, cordata (Syn T. microphylla	,,	,, ,, ,,	Eastern North America
* ,, dasystyla (Syn T. euchlora)	,,	Distinct upright growth; leaves curled somewhat. Very valuable	South-Eastern United States
,, heterophylla (Syn T. macrophylla)	,,	Ordinary soil and position	North America
,, mandshurica	Tree 40 to 50 ft.	,, ,, ,,	Mandchuria
,, miqueliana (Japanese Lime)	Tree 60 to 80 ft.	,, ,, ,,	Japan
* ,, petiolaris (Syn T. alba pendula), (White Weeping Lime)	Tree 50 ft.	,, ,, ,,	Eastern Europe

DOVASTON YEW ON STEEP BANK.

* ,, platyphyllos (Syn T. europæa)	Tree 60 to 80 ft.	,, ,, ,,	Europe
,, ,, and varieties	Various heights	,, ,, ,,	Garden forms
,, pubescens (Syn T. leptophylla	Tree 50 to 70 ft.	,, ,, ,,	Eastern United States
,, vulgaris (Syn T. hybrida), (Common Lime)	Tree 60 to 80 ft.	,, ,, ,,	Europe
Taxus (Yew). See pp. 83, 114, 310			
*Trachycarpus excelsus (Syn Chamærops excelsa)	Evergreen tree 20 ft.	Good deep loam, shelter from rough winds	Japan
Ulmus alata (Cork-winged Elm)	Tree 30 to 40 ft.	Ordinary soil and position	Southern United States
,, americana (American Elm)	Tree 80 to 90 ft.	,, ,, ,,	North America
,, ,, pendula (American Weeping Elm)	Weeping tree	,, ,, ,,	Garden form
,, campestris (Common Elm)	Tree 60 to 80 ft.	,, ,, ,,	Europe and Asia
* ,, ,, aurea (Golden-leaved Elm)	Tree 30 ft.	,, ,, ,,	Garden form
* ,, ,, microphylla pendula	Weeping tree	,, ,, ,,	,,
,, ,, suberosa	Tree 60 to 80 ft.	,, ,, ,,	,,
,, ,, viminalis (Twiggy Elm)	Tree 25 ft.	,, ,, ,,	,,
Ulmus fulva (Syn U. rubra)	Tree 50 to 60 ft.	,, ,, ,,	North America
,, montana (Scotch or Wych Elm)	Tree 60 to 80 ft.	,, ,, ,,	Europe and North Asia
,, ,, aurea	Tree 30 to 40 ft.	,, ,, ,,	Garden form
,, ,, crispa	Tree 30 to 40 ft.	,, ,, ,,	,,
* ,, ,, Dampieri aurea	Tree 25 to 30 ft.	,, ,, ,,	,,
,, ,, fastigiata	Tree 40 to 50 ft.	,, ,, ,,	,,
* ,, ,, pendula	Weeping tree	,, ,, ,,	,,
,, ,, purpurea (Purple-leaved Elm)	Tree 40 to 50 ft.	,, ,, ,,	,,
,, ,, and other varieties	Various heights	,, ,, ,,	Garden forms
,, parviflora (Syn U. chinensis)	Small tree 10 to 12 ft.	,, ,, ,,	China and Japan
,, pumila	Small tree 10 to 15 ft.	,, ,, ,,	North Asia
,, racemosa	Tree 50 to 60 ft.	,, ,, ,,	North America
,, turkestanica (Turkestan Elm)	Tree 40 to 50 ft.	,, ,, ,,	Turkestan
Xanthoxylum americanum (Toothache tree)	Shrub 10 to 20 ft.	,, ,, ,,	United States
,, planispinum	Shrub 10 to 15 ft.	,, ,, ,,	Japan
Zelkowa acuminata	Tree 50 to 80 ft.	,, ,, ,,	Japan
,, crenata	Tree 60 to 80 ft.	,, ,, ,,	Caucasus
,, Verschaffelti (Syn Ulmus Verschaffelti)	Tree 30 ft.	,, ,, ,,	Eastern Europe and Asia Minor

INDEX

The Index may not appear at first so complete as the scope of the book warrants; but as almost all the various chapters contain lists, and the tables at the end of the book are in alphabetical order, anything more lengthy would be needless repetition. The name of tree or shrub required may be easily found. Thus the vines are in the chapter "Hardy Climbing Shrubs," and so on. This arrangement has been followed throughout.

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